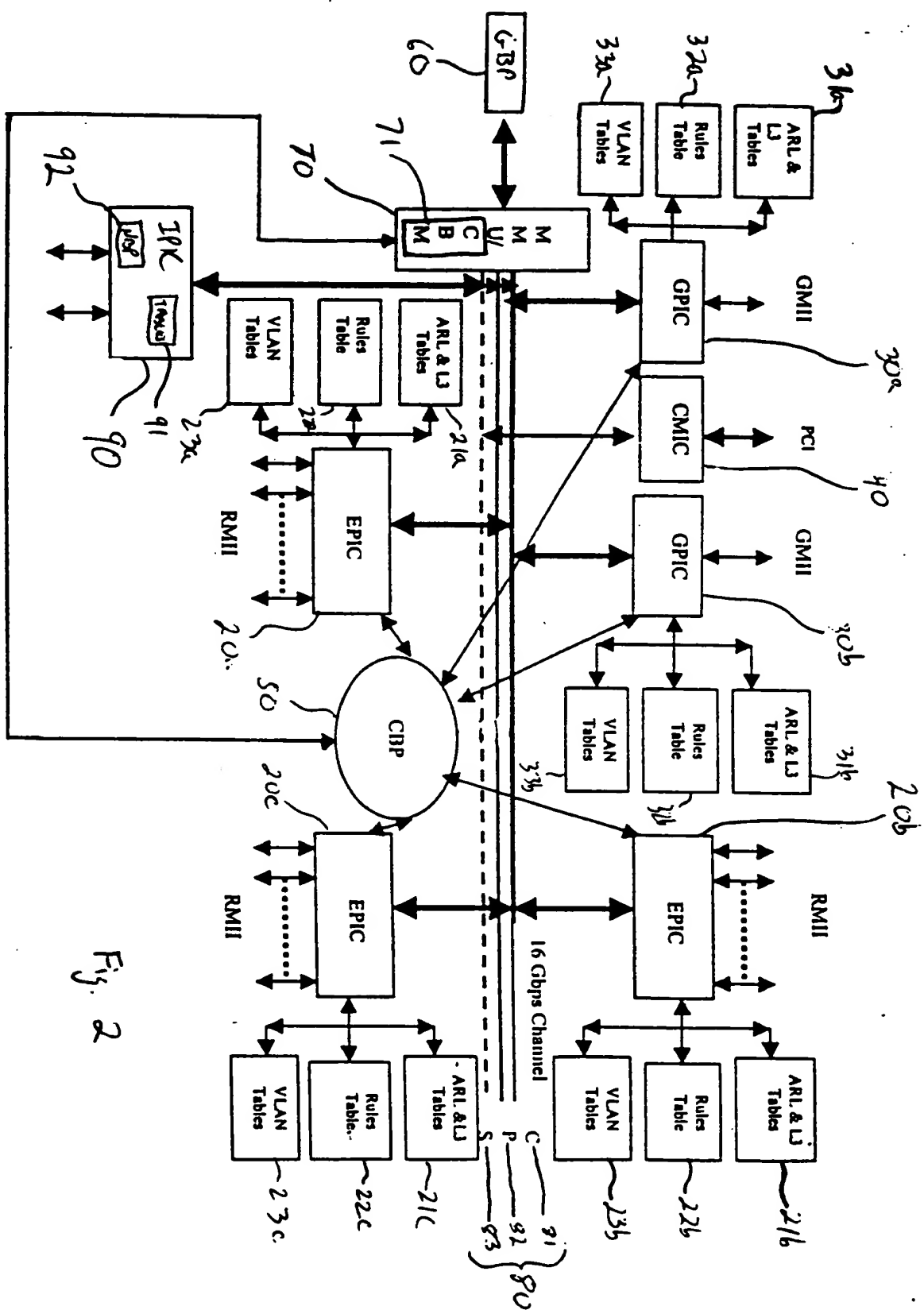


Fig. 1



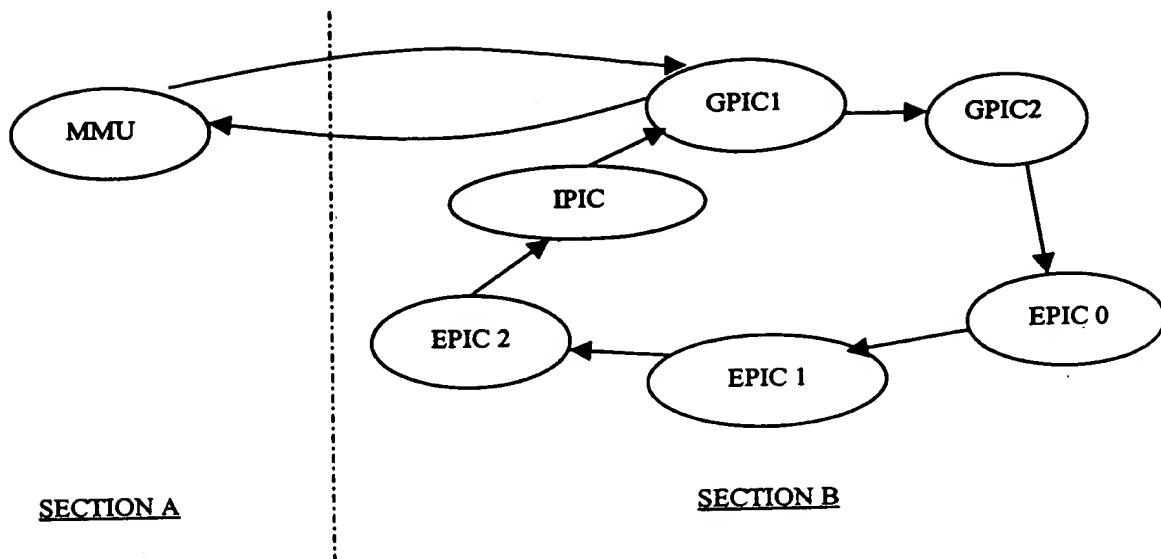


Fig. 4a

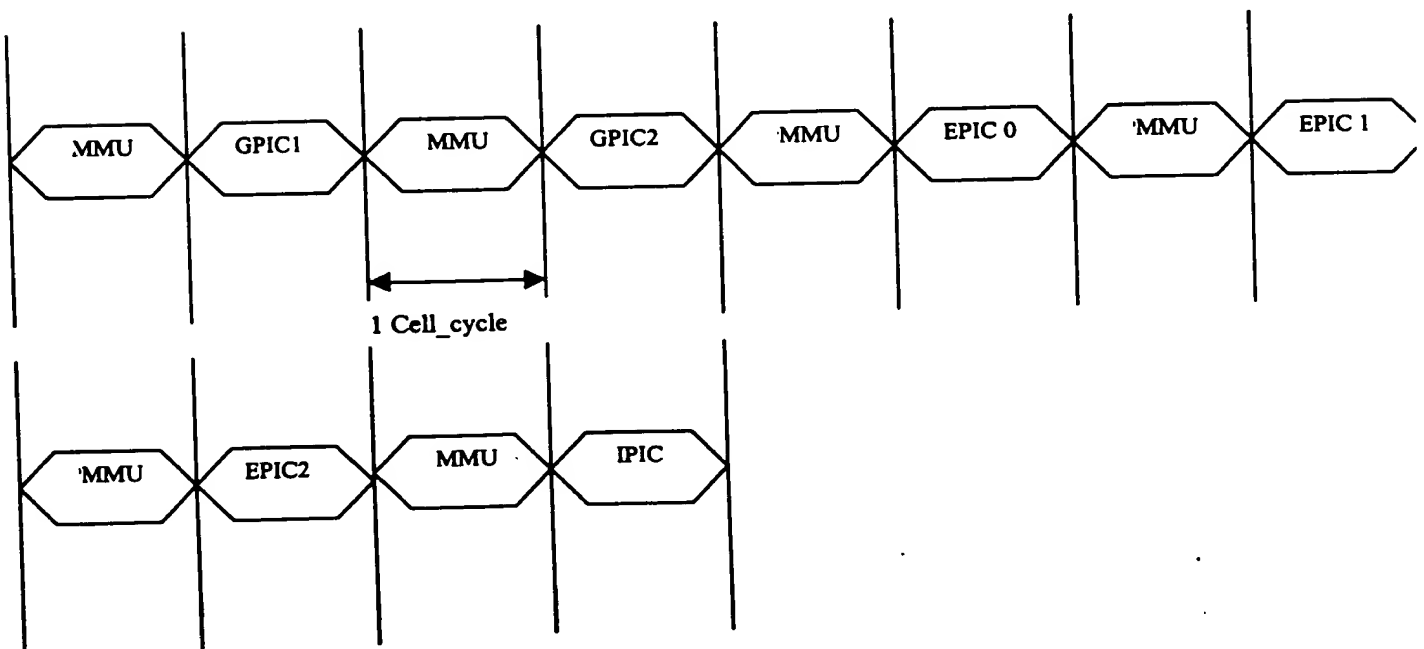


Fig. 4b

Protocol Channel Messages

30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
Op ode	Ip IPX	Rese rved	Nxt cell	Src Dest Port			Cos	J	S	E	Cr c	P	O	Len	

62	60	58	56	54	52	50	48	46	44	42	40	38	36	34	32
Module Id Bitmap															

30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
R	Bc/Mc Portbitmap														

62	60	58	56	54	52	50	48	46	44	42	40	38	36	34	32
PF M	New IP checksum								M	MT-ModId		T	TGID		Mod opcode

30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
U	Untagged Portbitmap / Src Port Number (bit0..5)														

62	60	58	56	54	52	50	48	46	44	42	40	38	36	34	32
Rsvd		Matched Filter		Vlan Id						Src Port			Remote Port		

30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
CPU Opcodes									TimeStamp						

62	60	58	56	54	52	50	48	46	44	42	40	38	36	34	32
R	L3 Port Bitmap														

Fig. 5

SCANNED 7

Side Band Channel Messages

30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
Opcode			Dest Port / Destination Dev Id			Src Port			DataLen			E	EC ode	Cos	C
Address															
Data															

Fig. 6

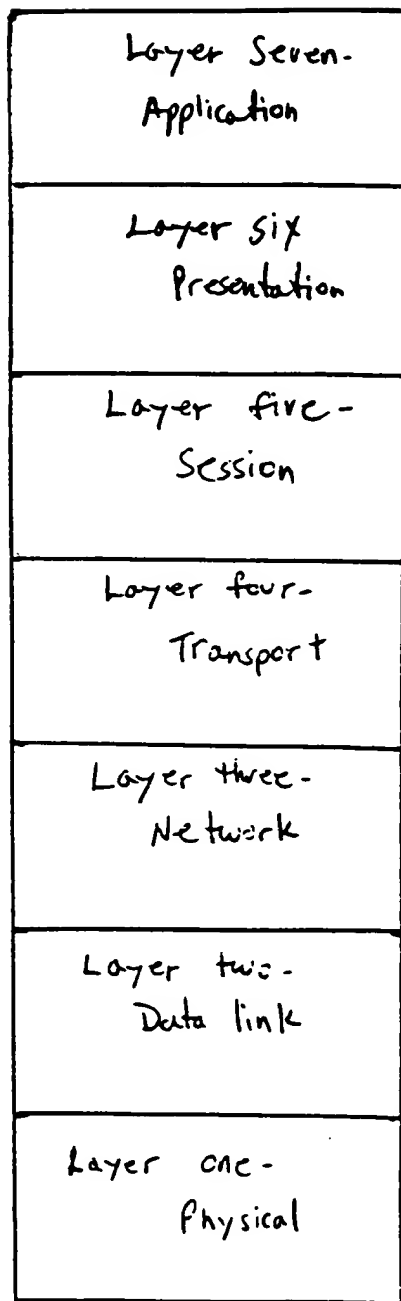


Figure 7
Prior Art

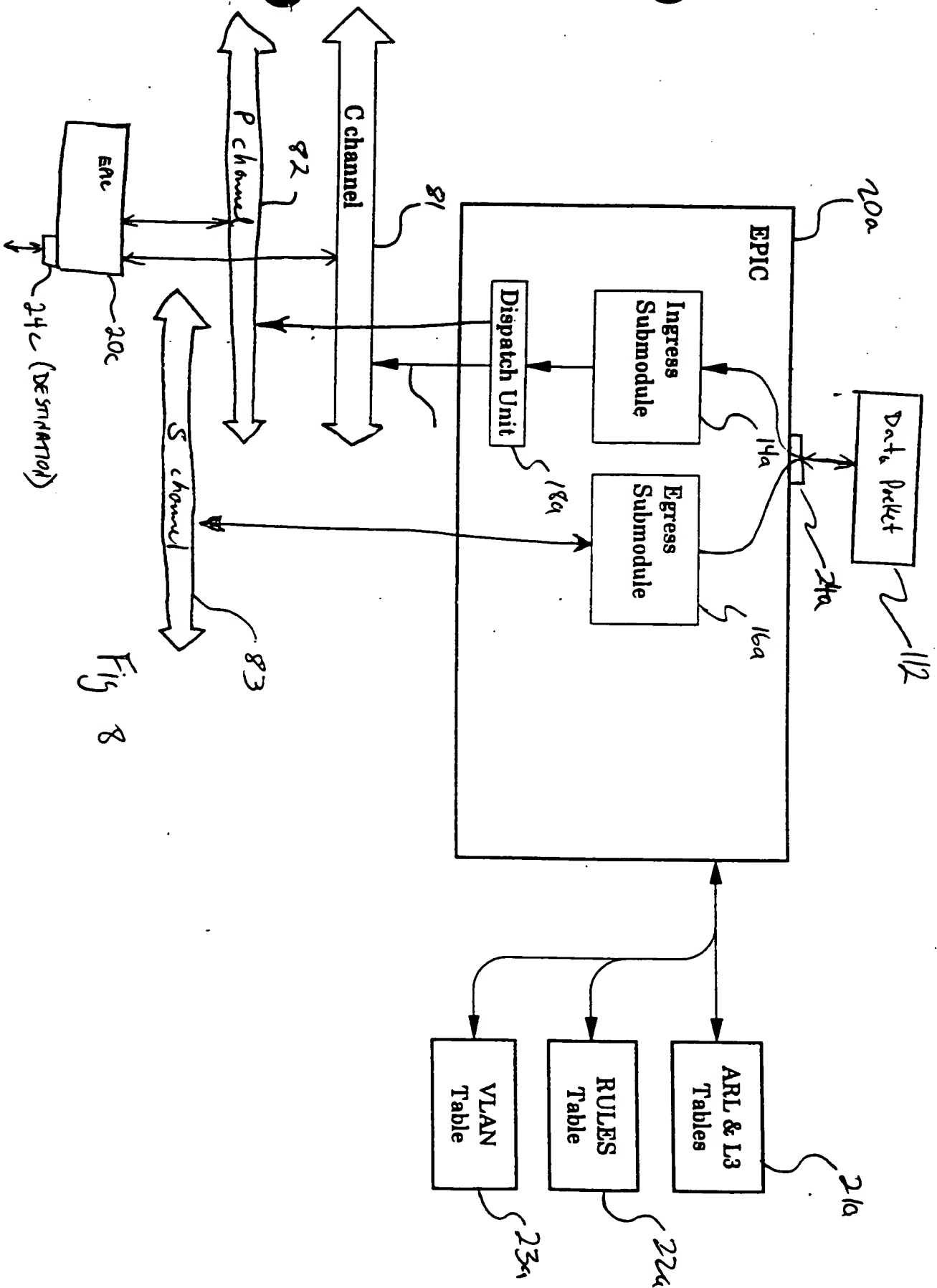


Fig 8

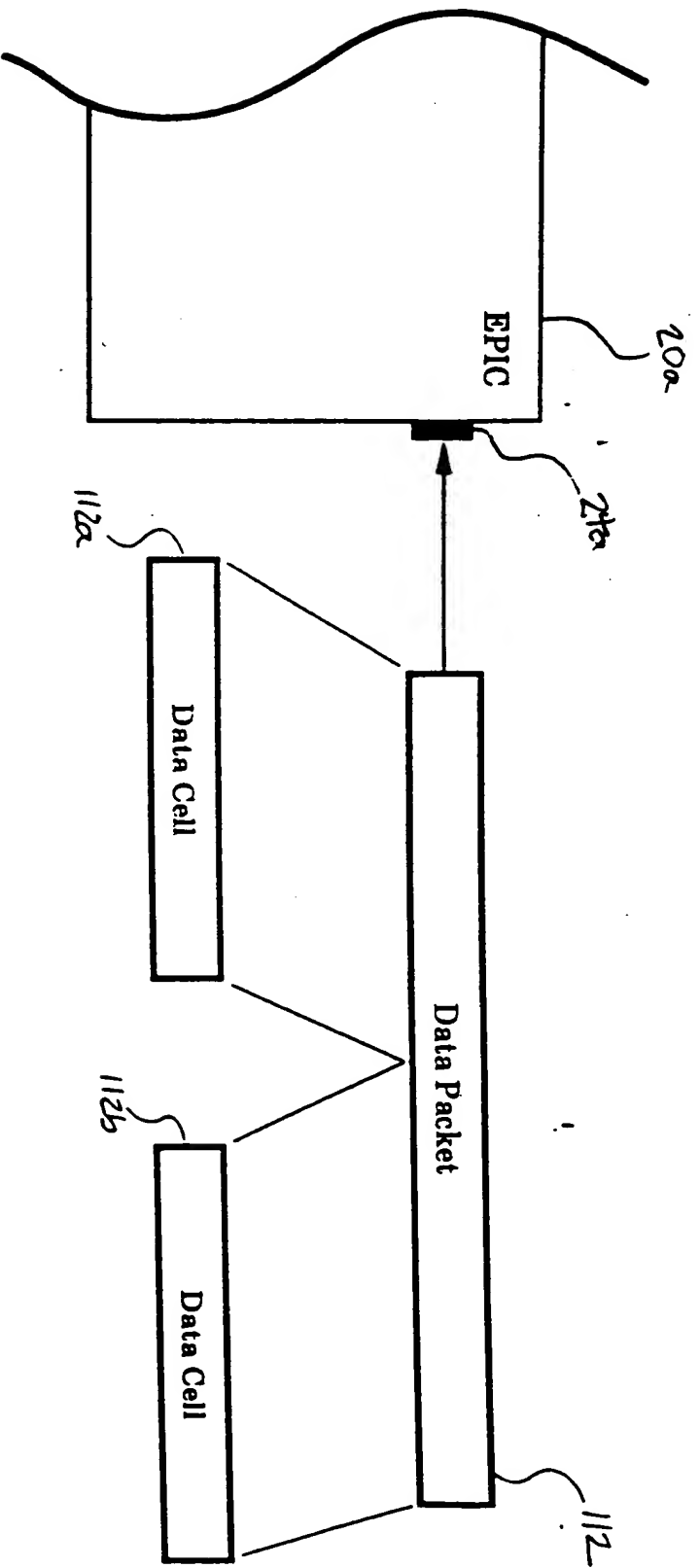


Fig. 9

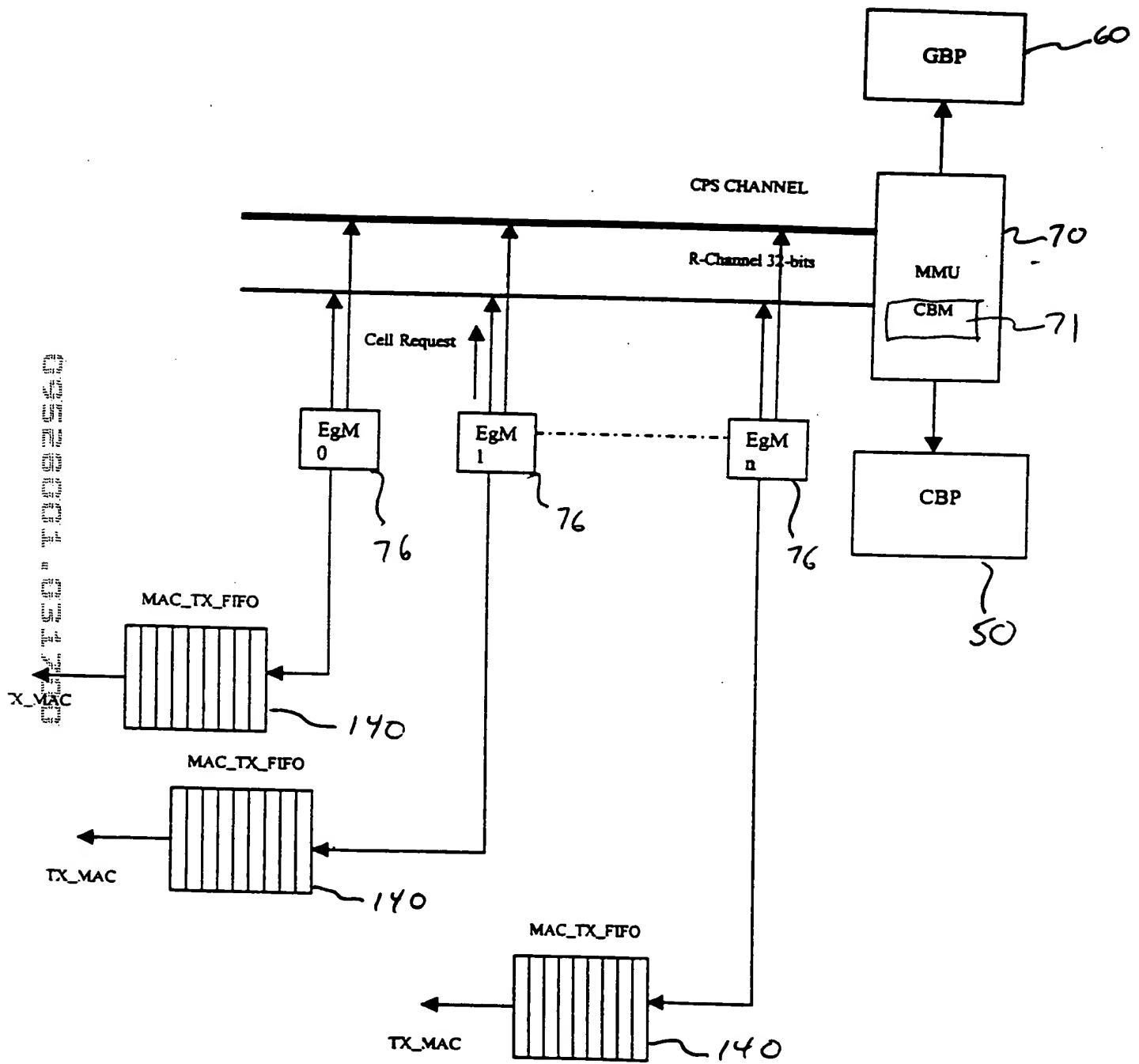


Fig. 10

Line 0 →	FC LC BC/MC Cpy_cnt(5b) Cell_length (7b) CRC (2b) NC_header (16b) Src Count(6b) IPX _i IP _i Time_Stamp (14b) O bits(2b) P NextCellLen(2b) CpuOpcode(4b) Cell_data (0-9B)
Line 1 →	Cell_data (10-27) Bytes
Line 2 →	Cell_data (28-45) Bytes
Line 3 →	Cell_data (46-63) Bytes

Fig. 11

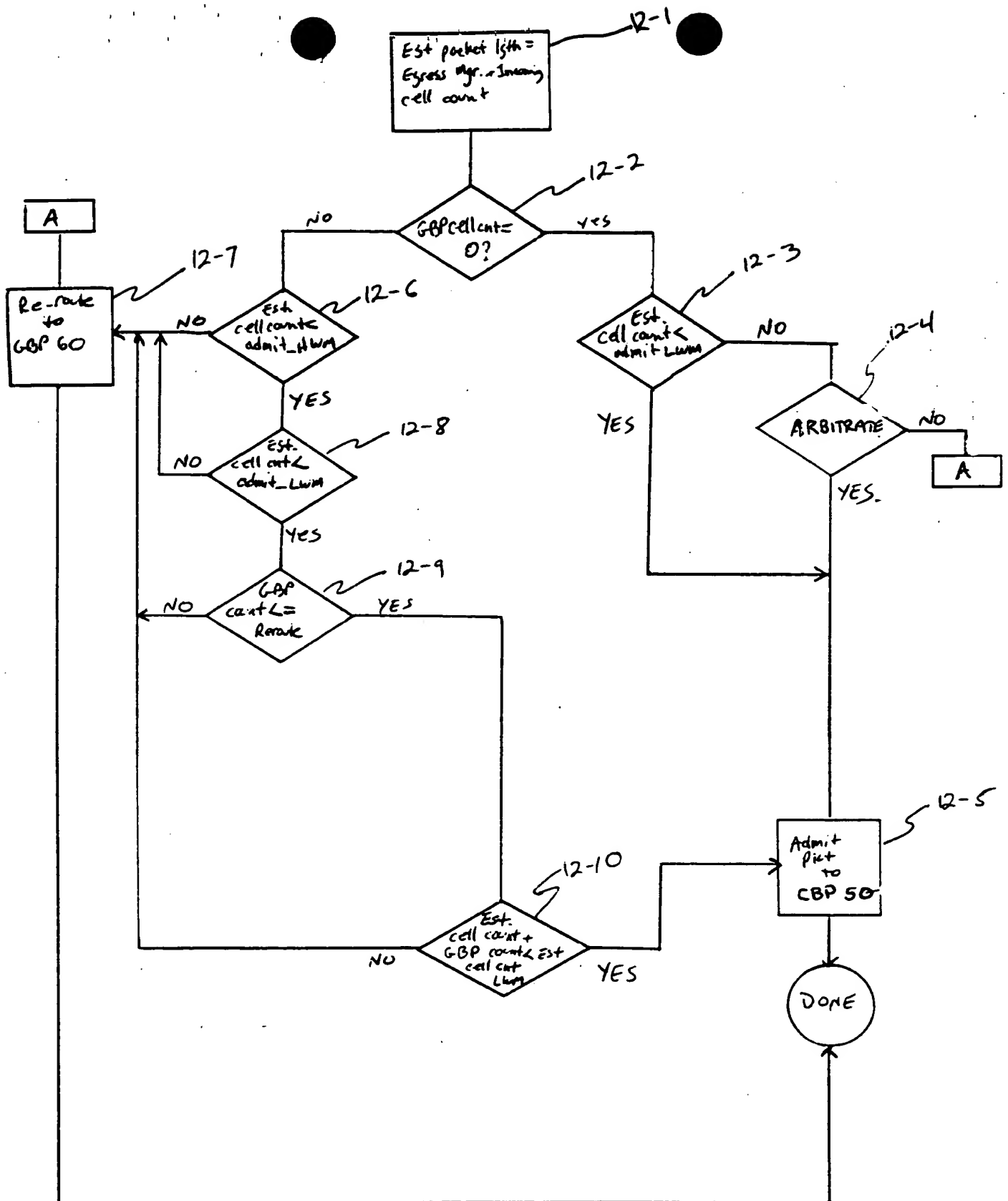


Fig. 12

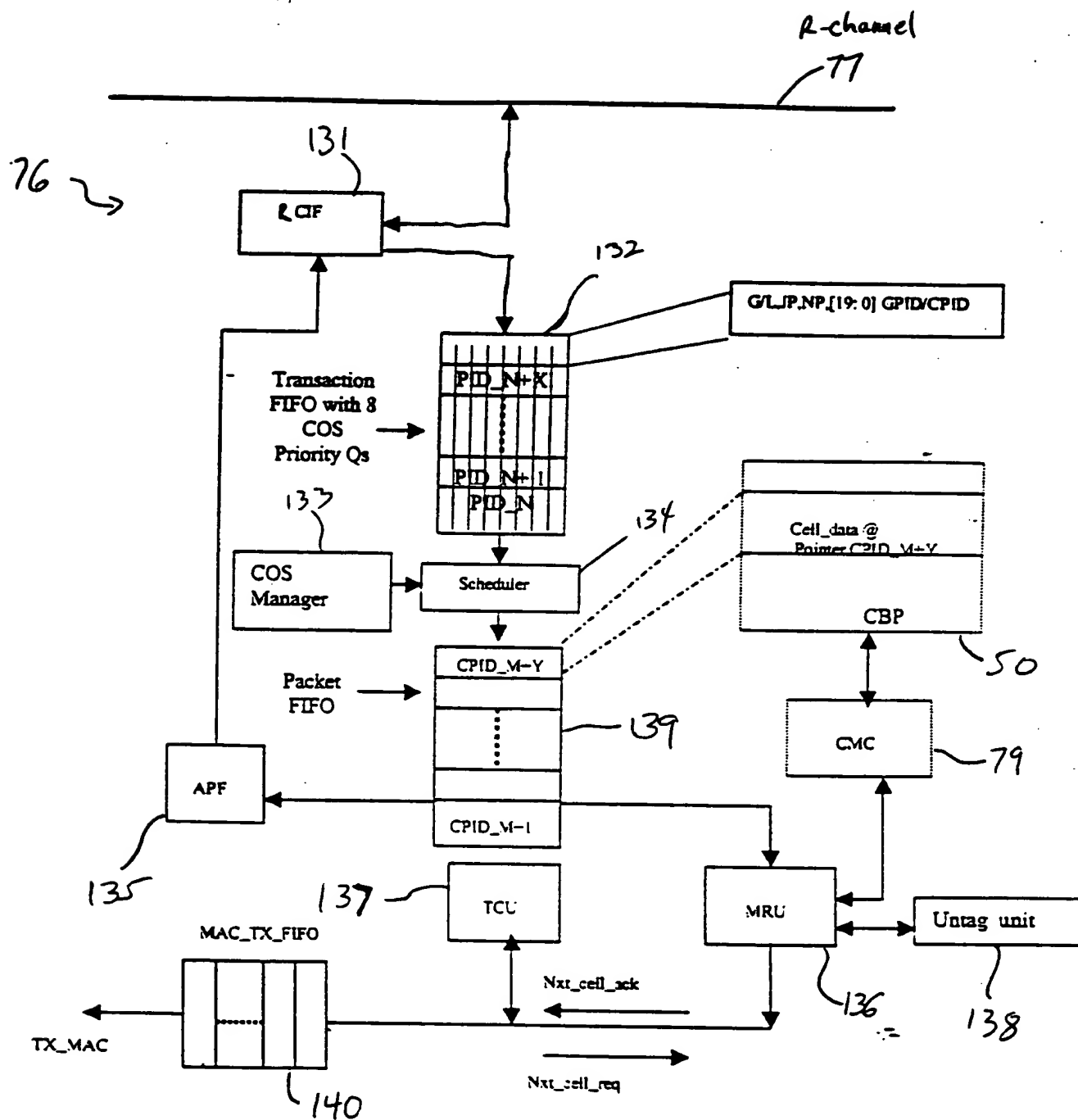


Fig 13

Data Flow

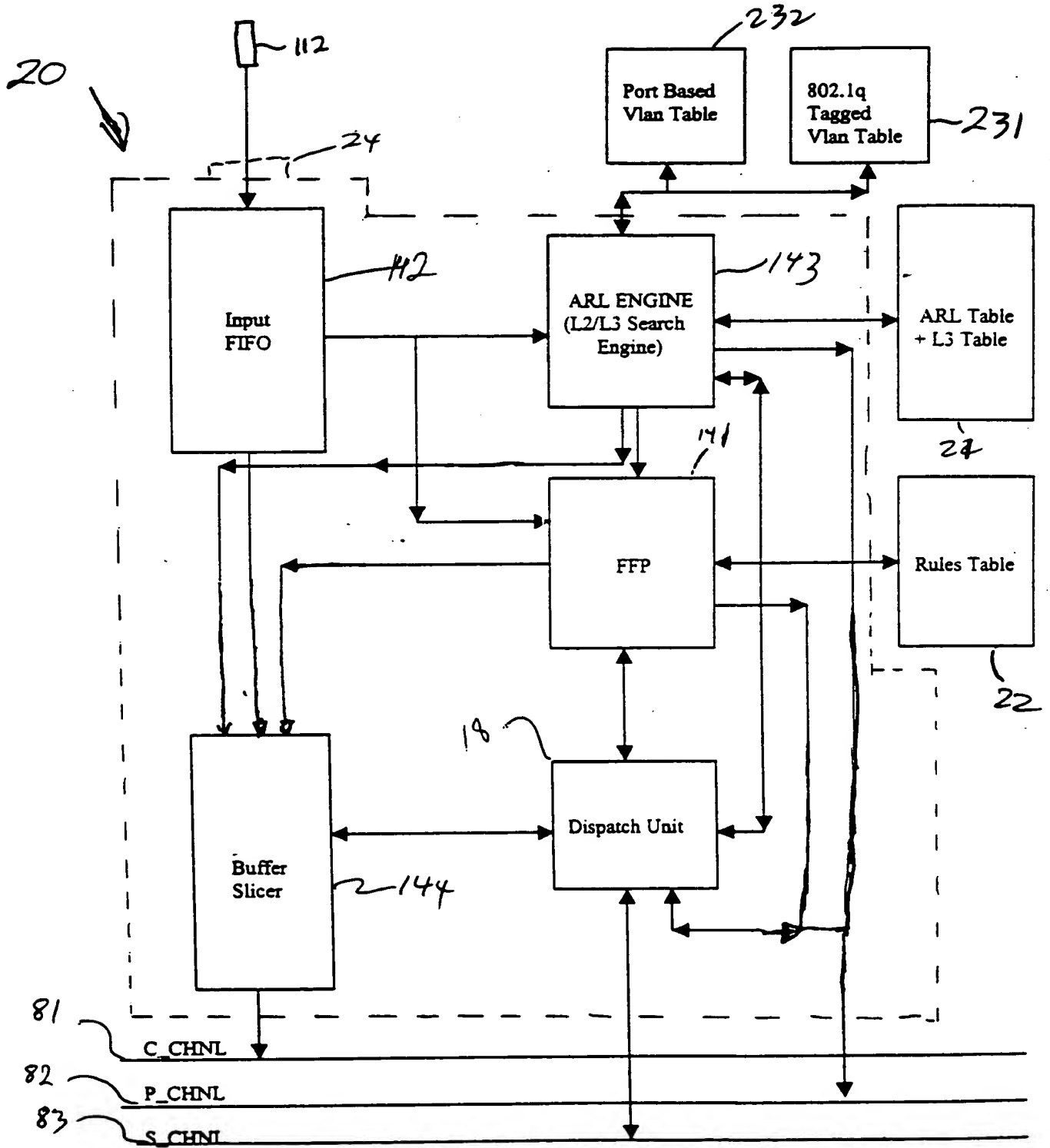


Fig. 14

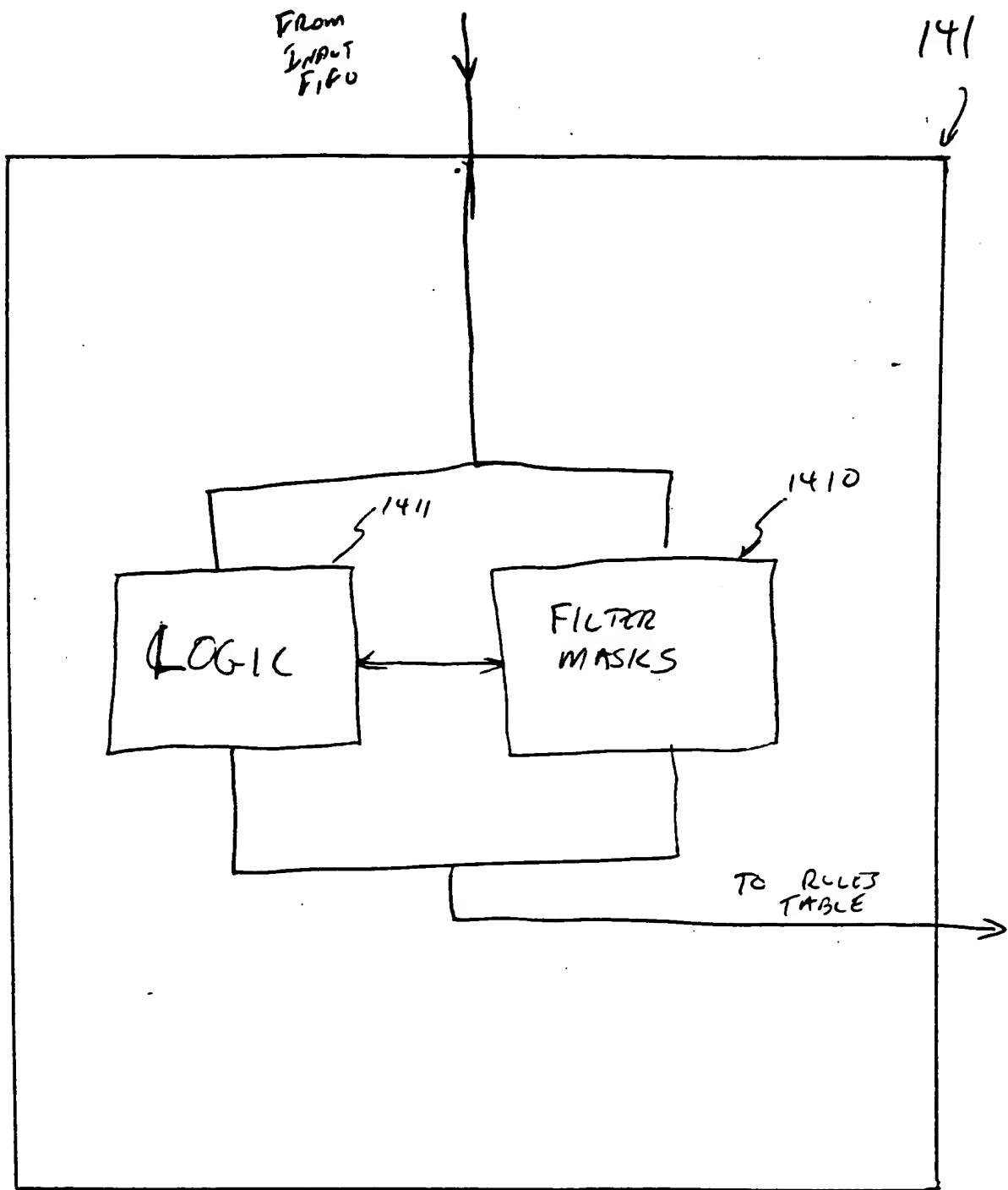
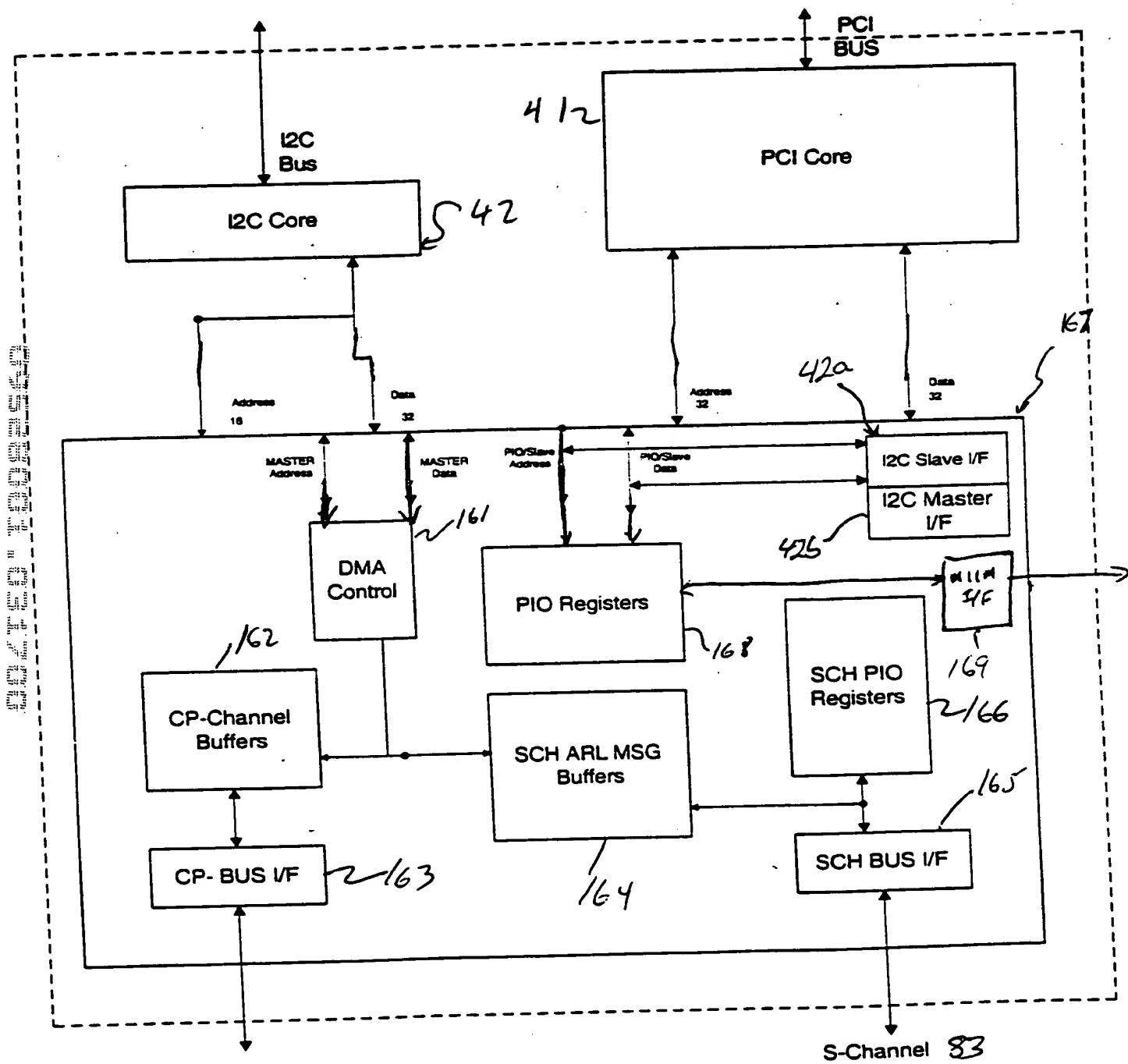


FIG. 15

40



C channel 81
P channel 82

Fig. 16

FFP Programming Flow Chart

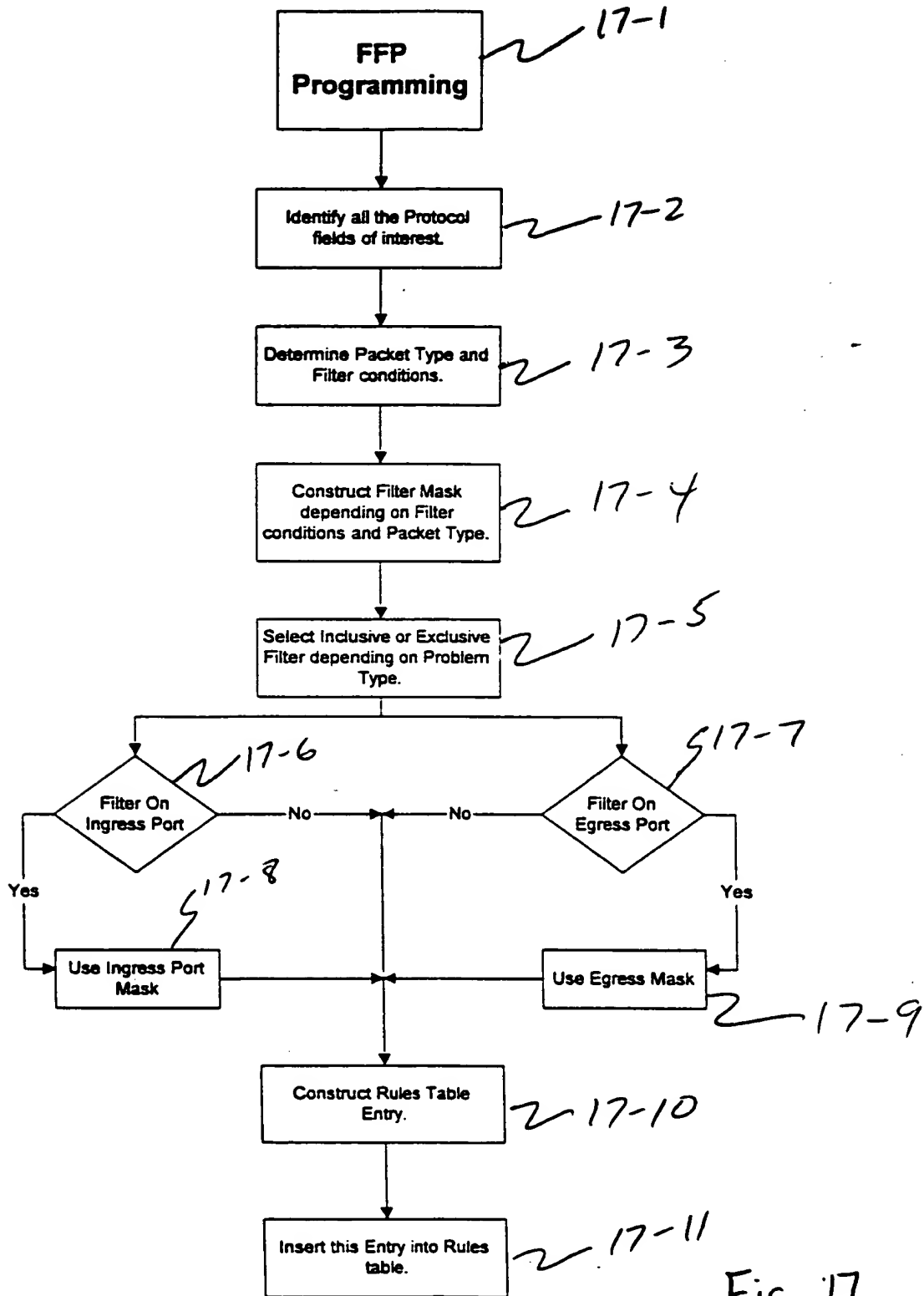


Fig. 17

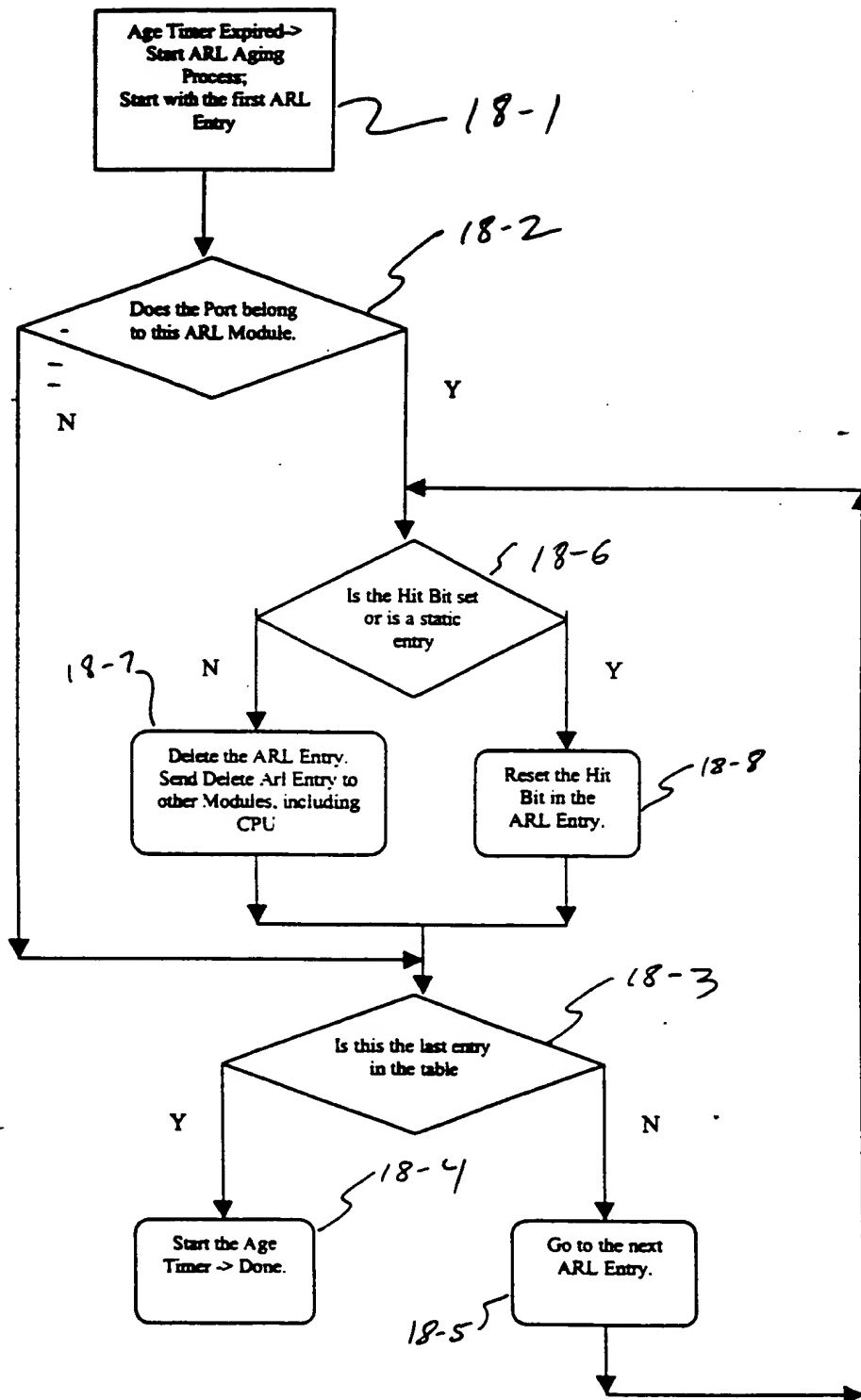


Fig. 18

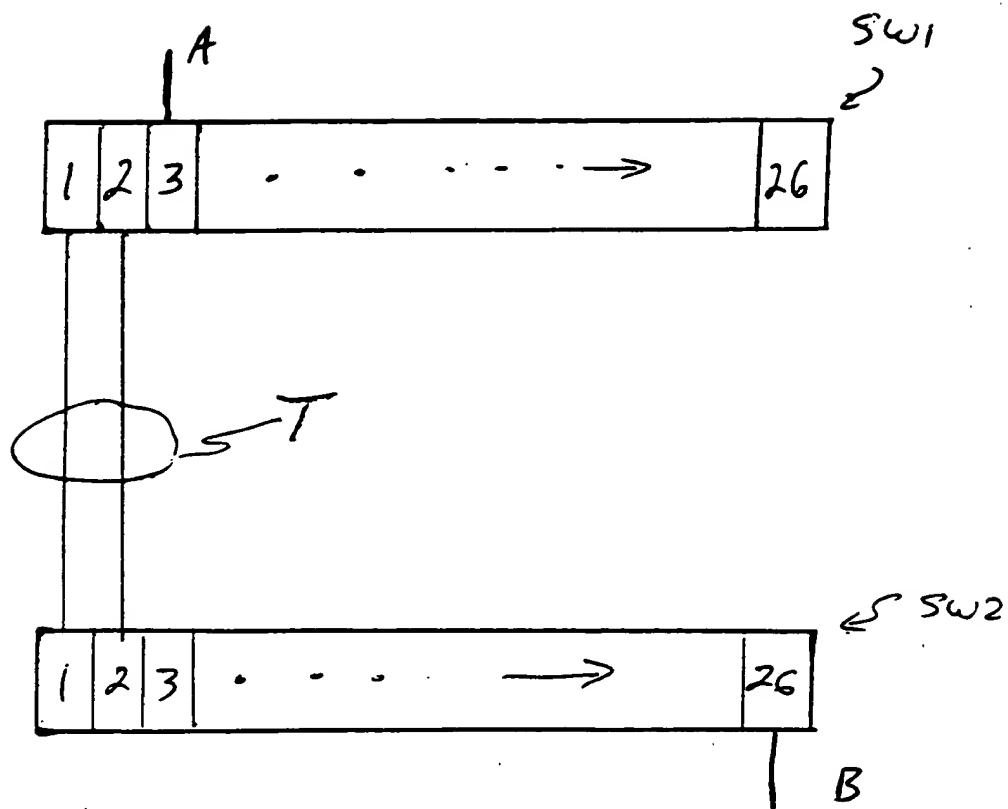


Fig. 19

Field	Header	Size	Offset For Ethernet II Untagged	Offset For Ethernet II Tagged	Offset For SNAP Untagged	Offset For SNAP Tagged
Destination Mac Address	Mac	6 Bytes	0	0	0	0
Source Mac Address	Mac	6 Bytes	6	6	6	6
Protocol Type	Mac	2 Bytes	12	16	20	24
Destination SAP	802.3	1 Byte	NA	NA	14	18
Source SAP	802.3	1 Byte	NA	NA	15	19
802.1p Priority	Mac	3 bits	NA	14	NA	14
VLAN Id	Mac	12 bits	NA	14+ 4b	NA	14+4b
TOS Precedence	IP	3 bits	15	19	23	27
Differentiated Services	IP	6 bits	15	19	23	27
Source IP Address	IP	4 Bytes	26	30	34	38
Destination IP Address	IP	4 Bytes	30	34	38	42
Protocol	IP	1 Byte	23	27	31	35
Source Port	TCP/ UDP	2 Bytes	34	38	42	46
Destination Port	TCP/ UDP	2 Bytes	36	40	44	48
TCP Control Flags (For aligning on Byte boundary 2 bits of reserved bits preceding this field is included)	TCP	1 Byte	47	51	55	59
Data at Offset 1	NA	8 Bytes	Data Offset1 From start of IP / IPX Header	Data Offset1 From start of IP / IPX Header	Data Offset1 From start of IP / IPX Header	Data Offset1 From start of IP / IPX Header
Data at Offset 2	NA	8 Bytes	Data Offset2 From start of IP / IPX Header	Data Offset2 From start of IP / IPX Header	Data Offset2 From start of IP / IPX Header	Data Offset2 From start of IP / IPX Header
Data at Offset 3	NA	8 Bytes	Data Offset3 From start of IP / IPX Header	Data Offset3 From start of IP / IPX Header	Data Offset3 From start of IP / IPX Header	Data Offset3 From start of IP / IPX Header
Data at Offset 4	NA	8 Bytes	Data Offset4 From start of IP / IPX Header	Data Offset4 From start of IP / IPX Header	Data Offset4 From start of IP / IPX Header	Data Offset4 From start of IP / IPX Header

FIGURE 20

Fig. 21a

Filter Mask Format:

Filter Enable (1b)	Counter (5b)	Rem Port (1b)	Output Mod (5b)	Output Port (6b)	TOS Prec (3b)		Diff Serv (6b)	802.1p Prior (3b)	
NMA Enb (1b)	No Match Action (10b)	Data Offset 4 (7b)	Data Offset 3 (7b)	Data Offset 2 (7b)	Data Offset 1 (7b)	Ingress Port Mask (6b)	Egress ModId Mask (5b)	Egress Port Mask (6b)	
Field Mask									

Field Mask Format:

Dest Mac addr (6 B)	Src Mac addr (6 B)	Prot type (2 B)	Dest SAP (1 B)	Src SAP (1 B)	802.1p Prio (3 b)	Vlan Id (12b)	TOS Prec (3b)	Diff Serv (6b)	Src IP addr (4B)	Dest IP addr (4 B)	Prot IP- (1B)	Src Port (2B)	Dest Port (2B)
---------------------	--------------------	-----------------	----------------	---------------	-------------------	----------------	---------------	----------------	------------------	--------------------	---------------	---------------	----------------

TCP Cntr Flags (1B)	Data 1 (8B)	Data 2 (8 B)	Data 3 (8B)	Data 4 (8B)
---------------------	-------------	--------------	-------------	-------------

Fig 21b.

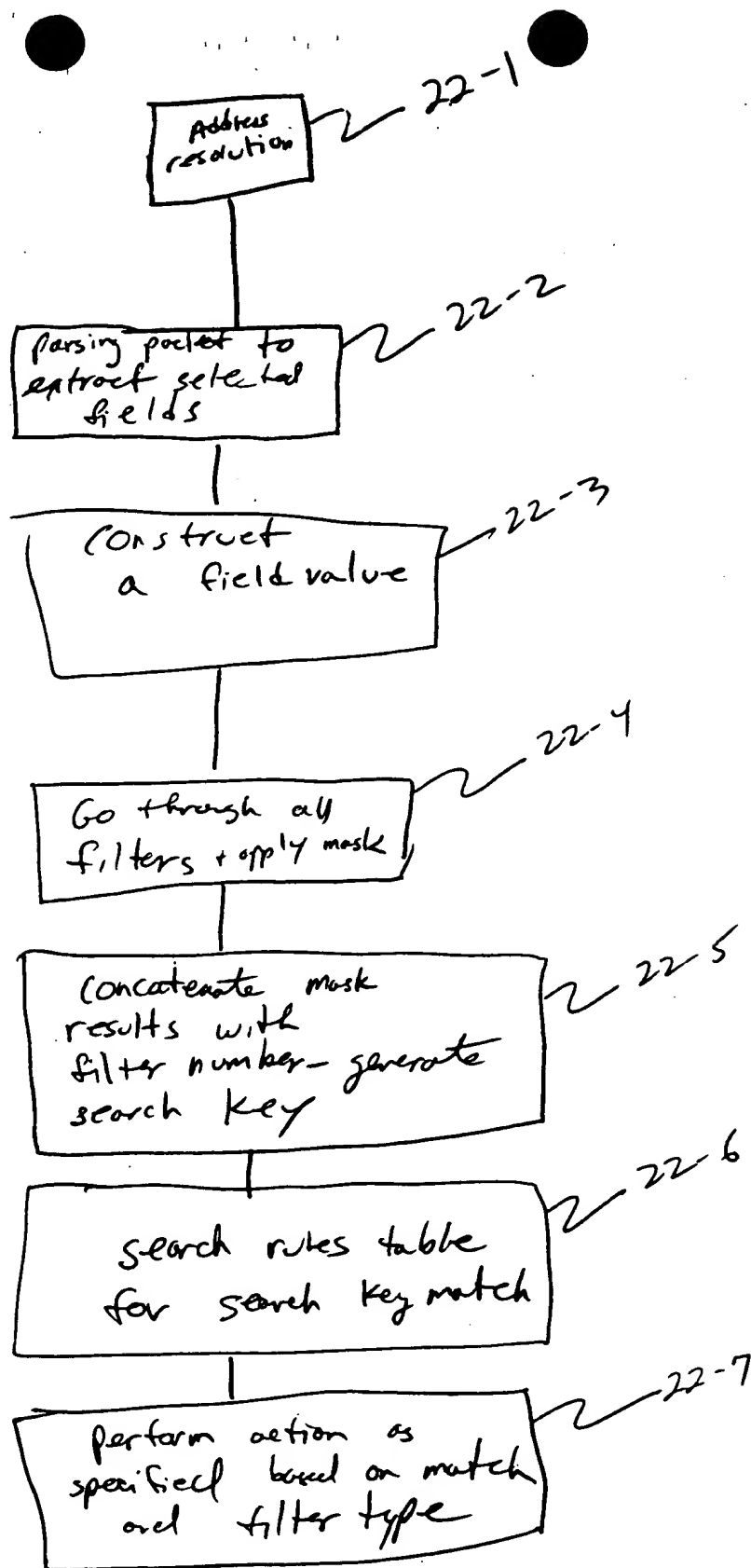


Fig. 22

✓ 22

Count er (5b)	Output Mod (5b)	Output Port (6b)	TOS_ P (3b)	Diff Services (6b)	802.1p Priority (3b)	Actio ns (11b)	Filter Select (3b)	Ingres s Port (6b)	Egrs Mod (5b)	Egrs Port (6b)	Filter Value (512 b)

Fig. 23

30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0
Source IP Address															
Multicast IP Address															
r	L3 Port Bitmap														
L3 Module Bitmap															
Unused										TTL Threshold		Source Port			

Fig. 24

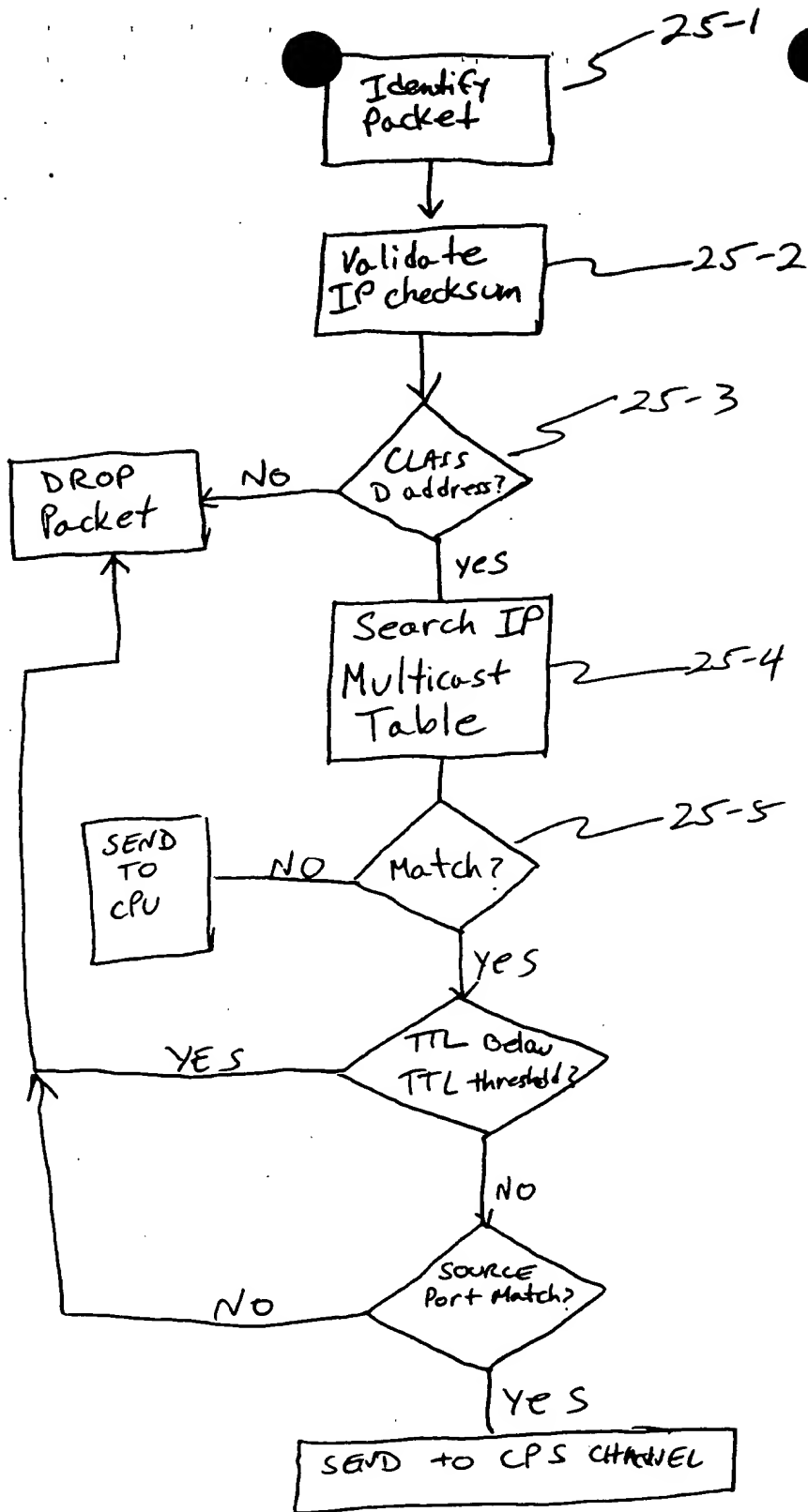


Fig. 25

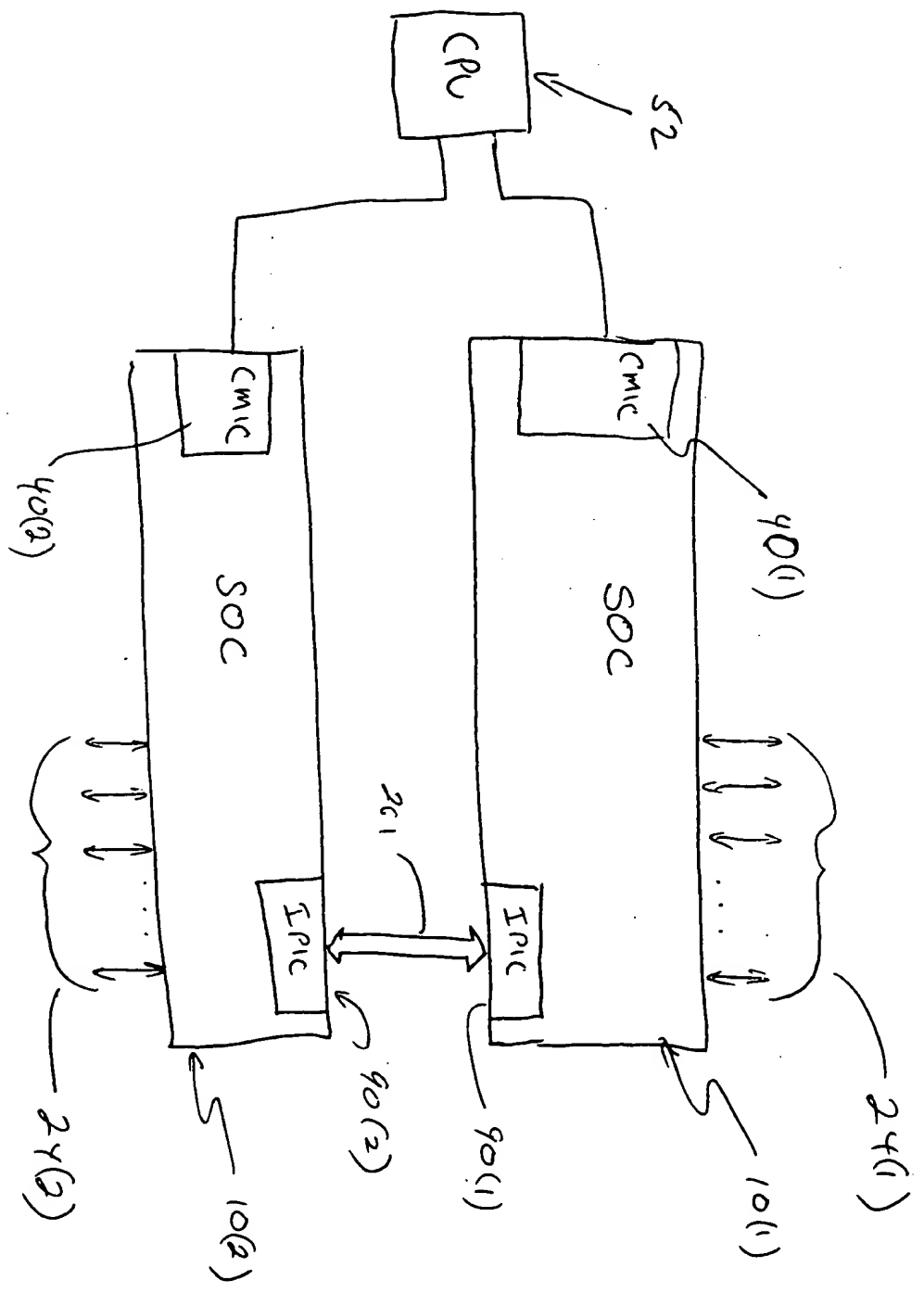


Fig. 26

FIG. 26 is a block diagram of a system architecture according to one embodiment of the present invention.

Fig. 27a

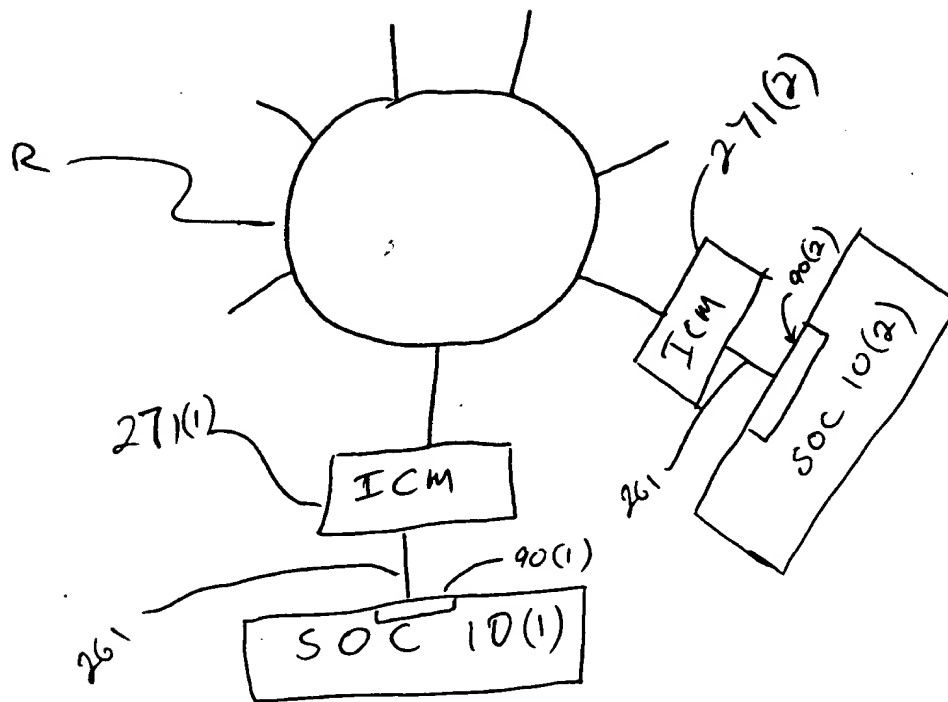
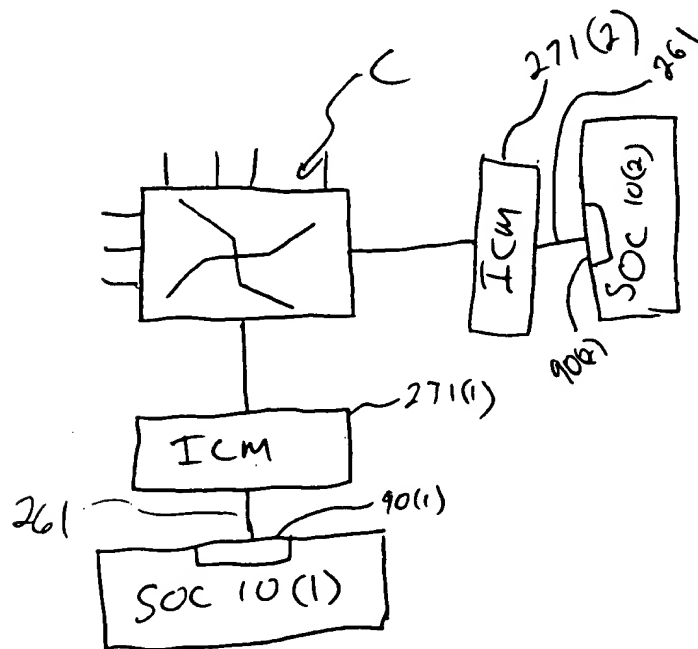


Fig. 27b



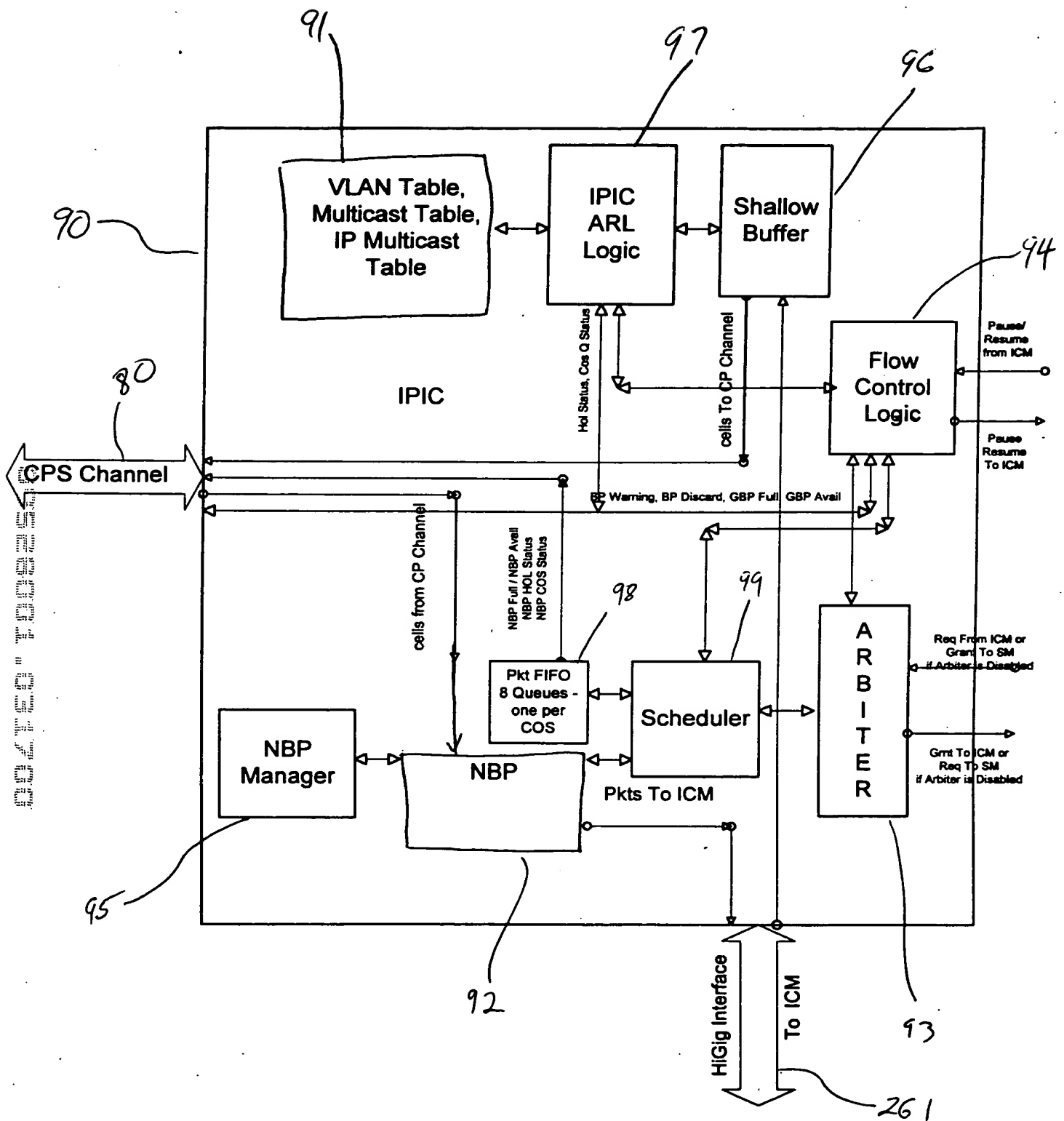


Fig 28.

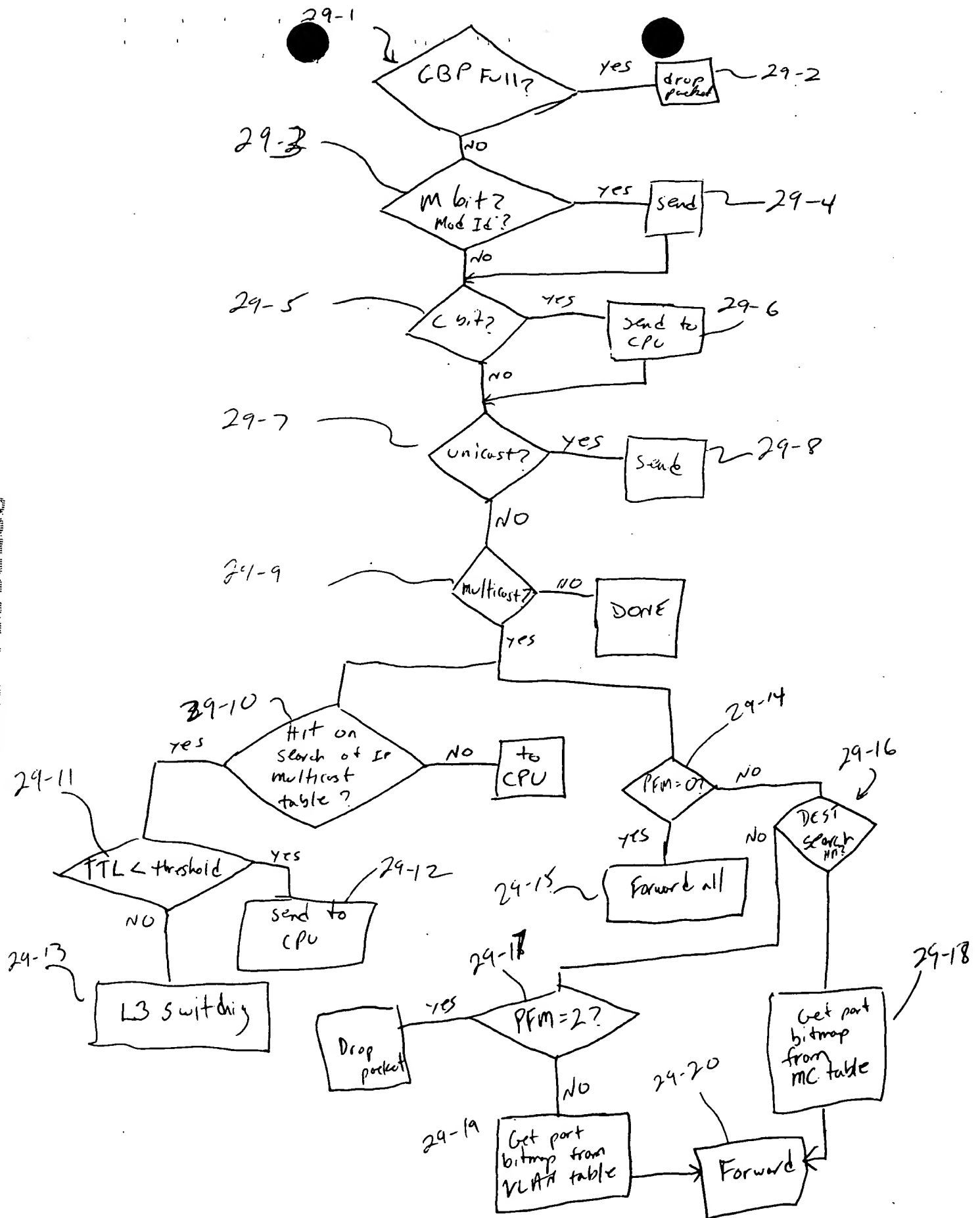


Fig. 29

COS Queue (3b)	C P F	NCA (2b)	802.1p Priority (3b)	Rate Counter (8b)	Rate Counter Threshold (8b)	Rate Discard Thresho ld (8b)	New Code Point (6b)	New COS Queue (3b)	New 802.1 Priority (3b)
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FIGURE 30

Offset Field	Offset 1	Offset 2	Offset 3	Offset 4
000	0-15	16-31	32-47	48-63
001	8-23	24-39	40-55	56-71
010	16-31	32-47	48-63	64-79
011	24-39	40-55	56-71	72-87
100	32-47	48-63	64-79	80-95
101	40-55	56-71	72-87	88-103
110	48-63	64-79	80-95	96-111
111	56-71	72-87	88-103	104-119

Figure 31

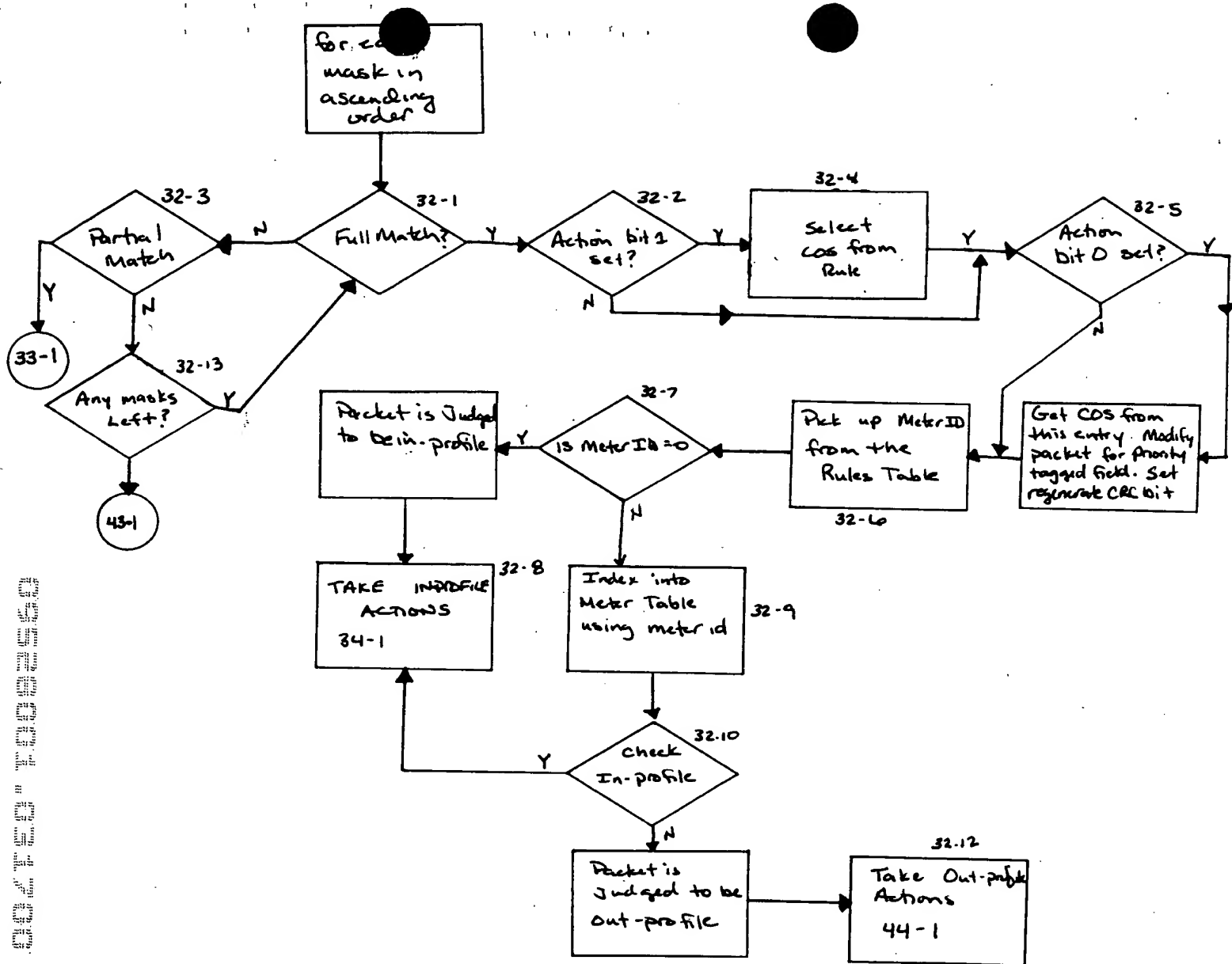


FIGURE 32

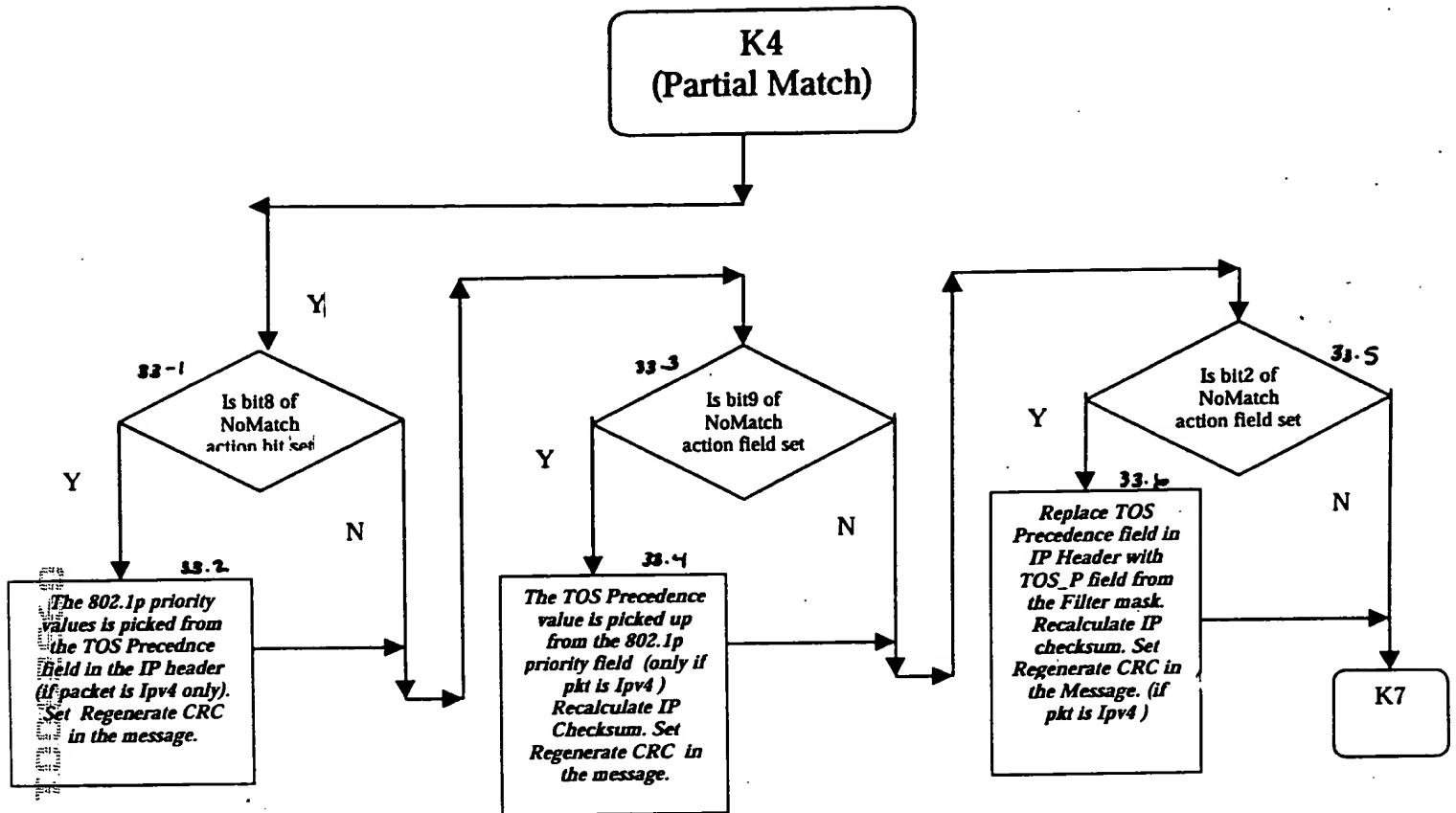


FIGURE 33

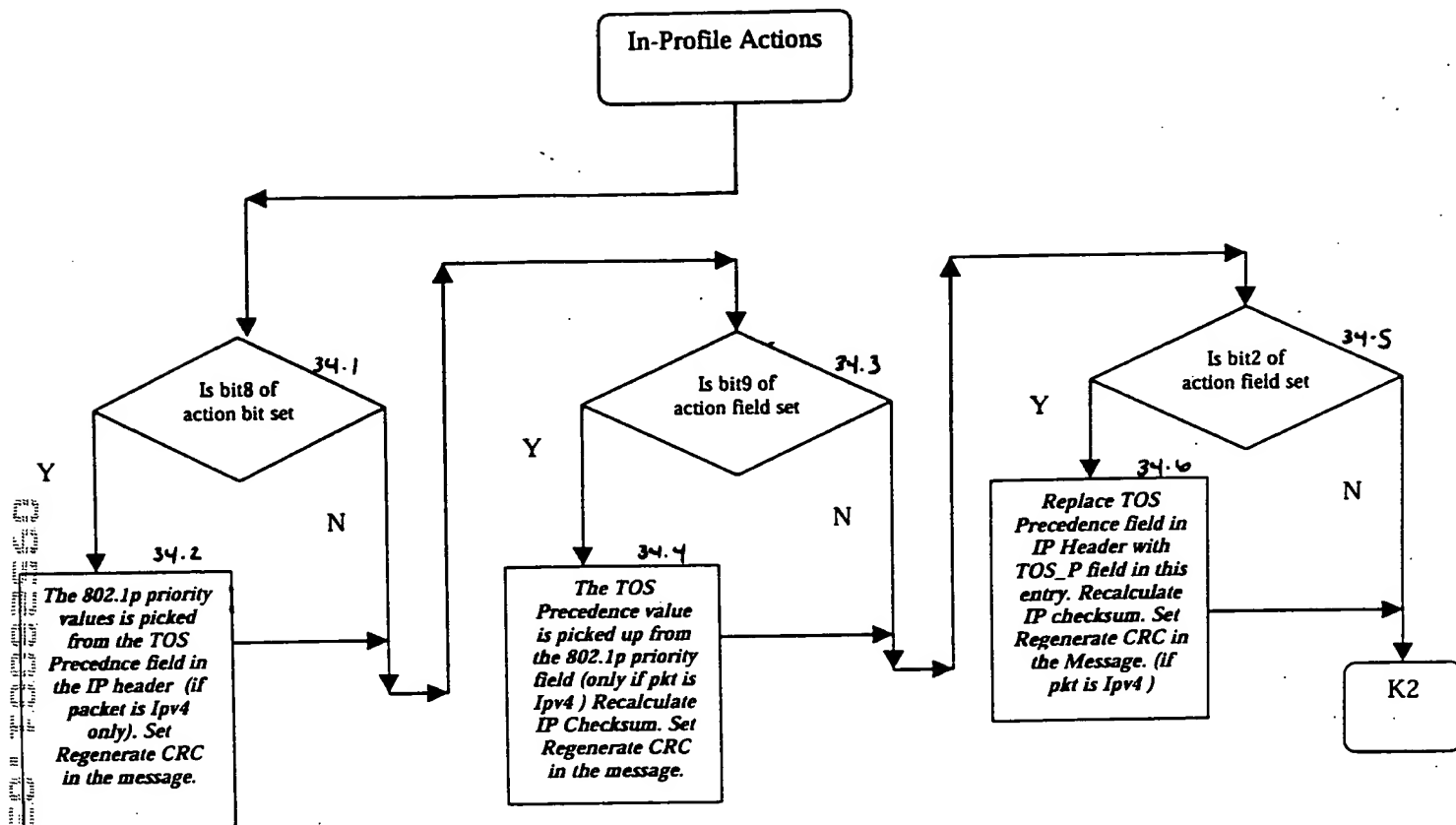


FIGURE 34

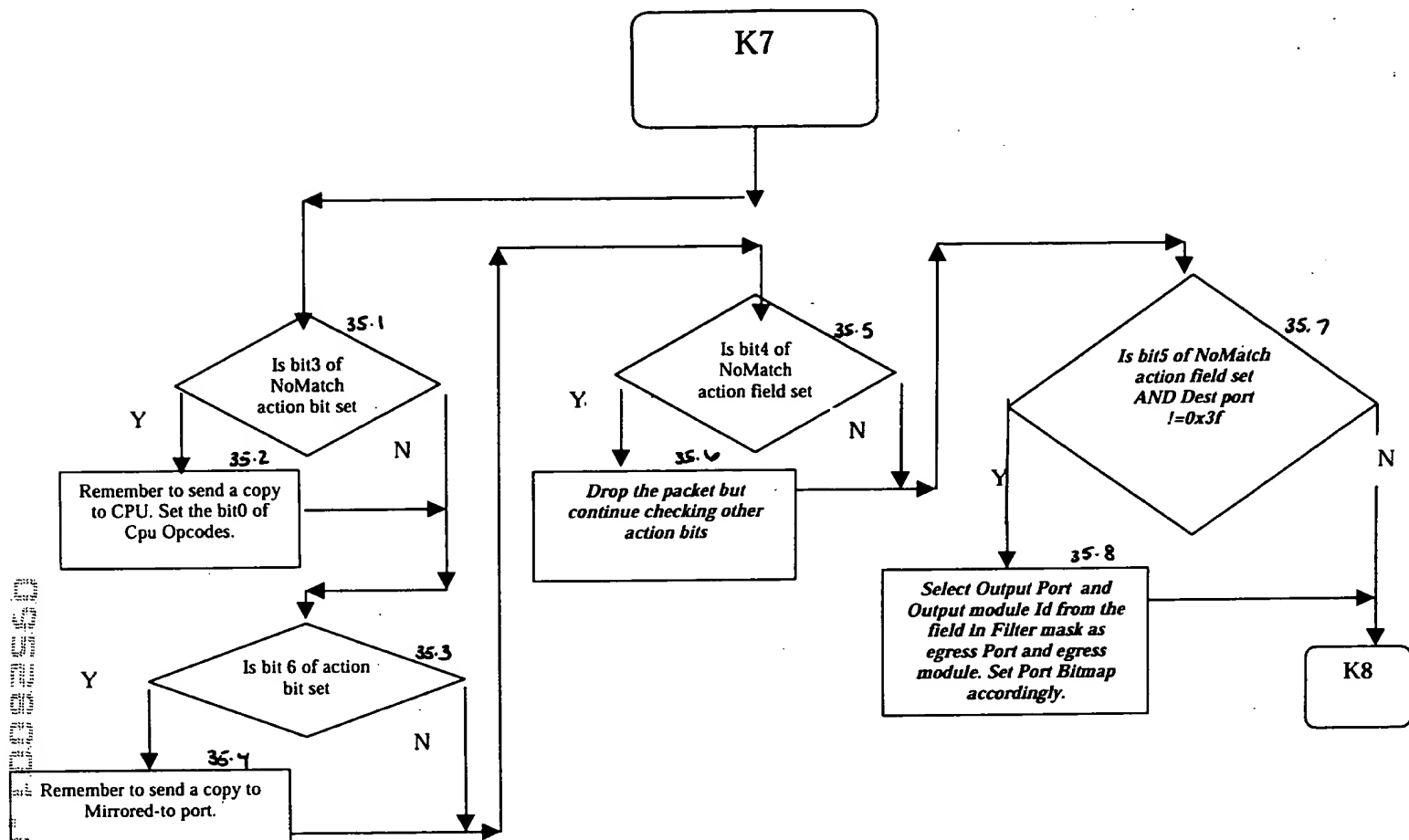


FIGURE 35

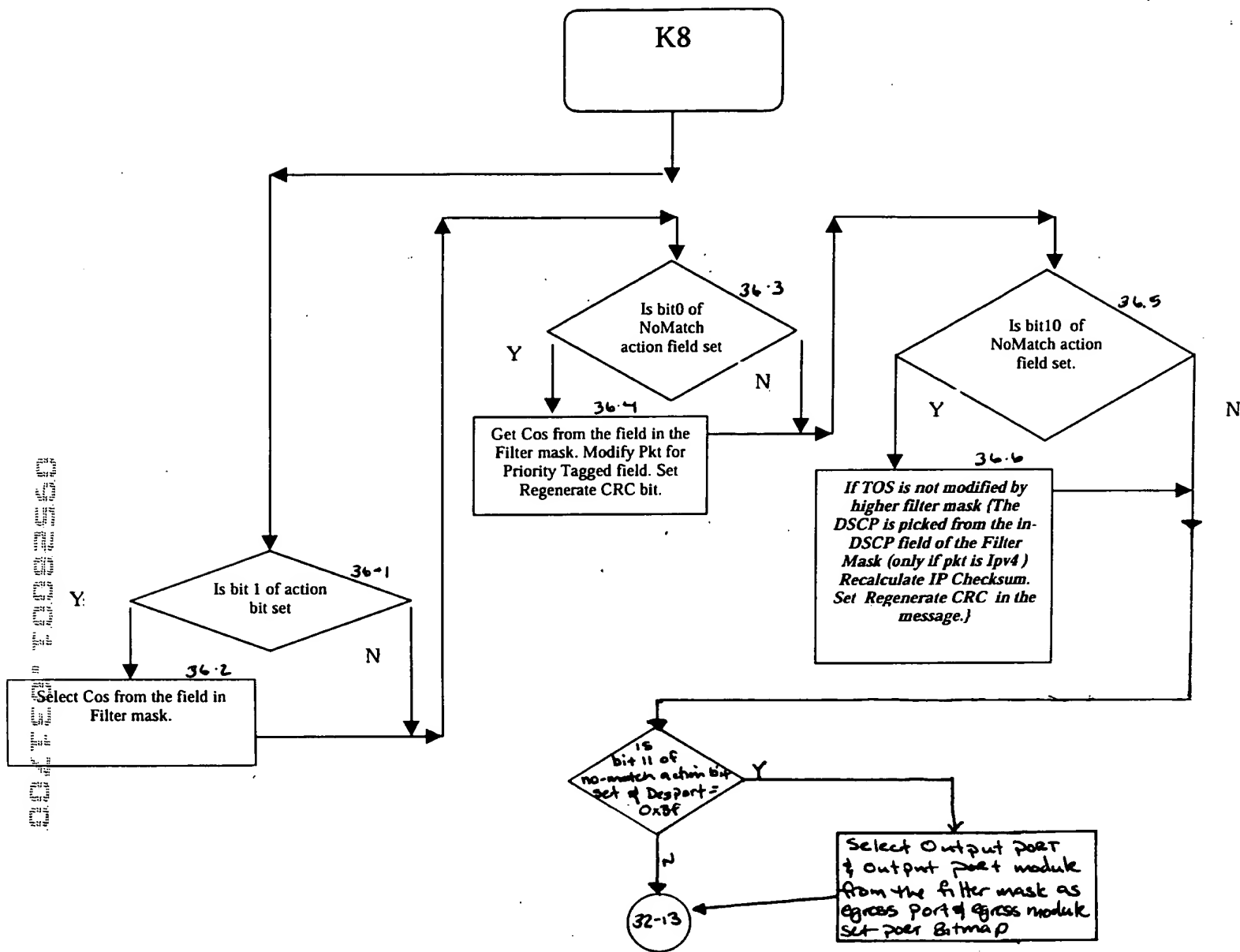


FIGURE 36

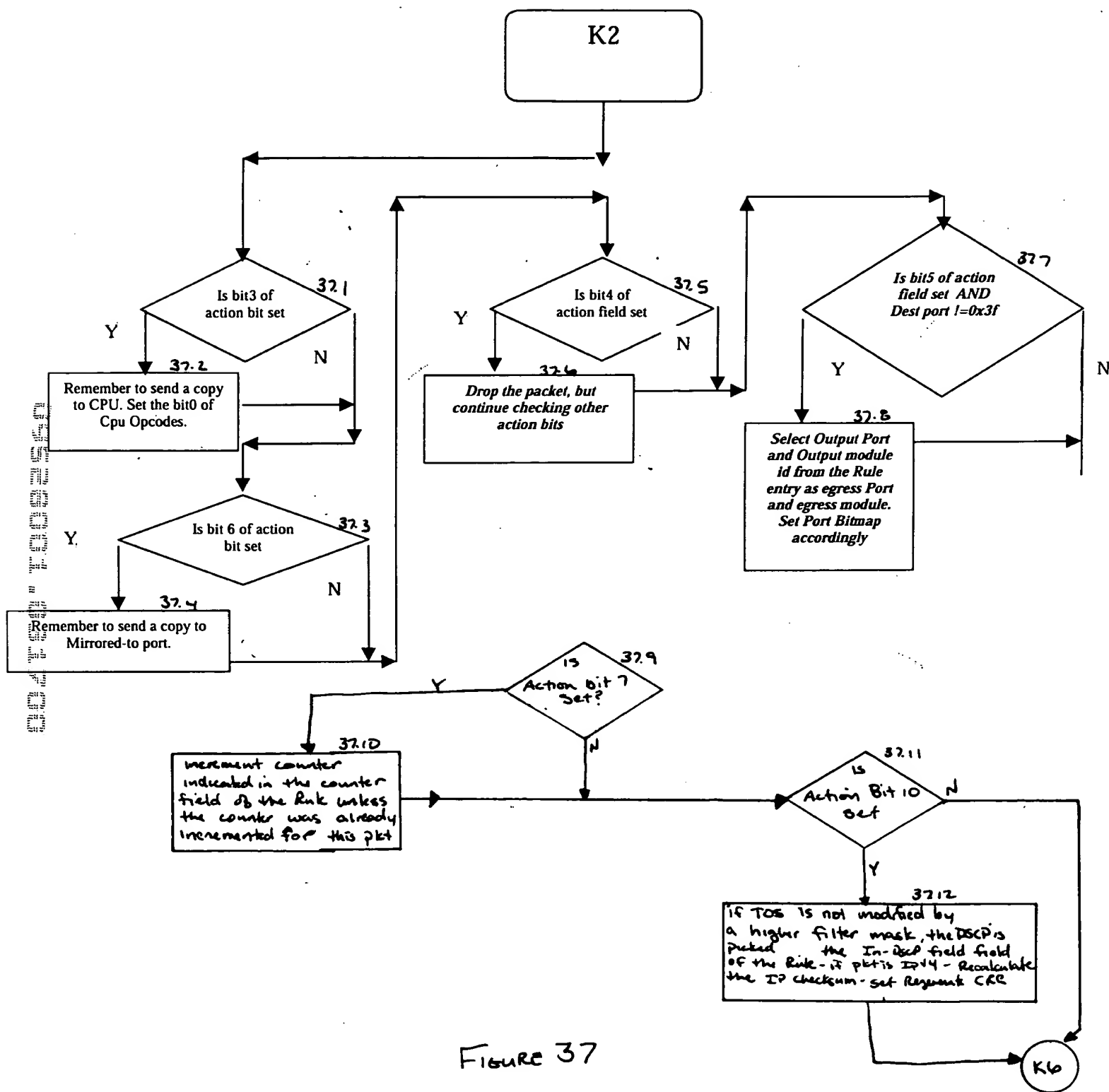


FIGURE 37

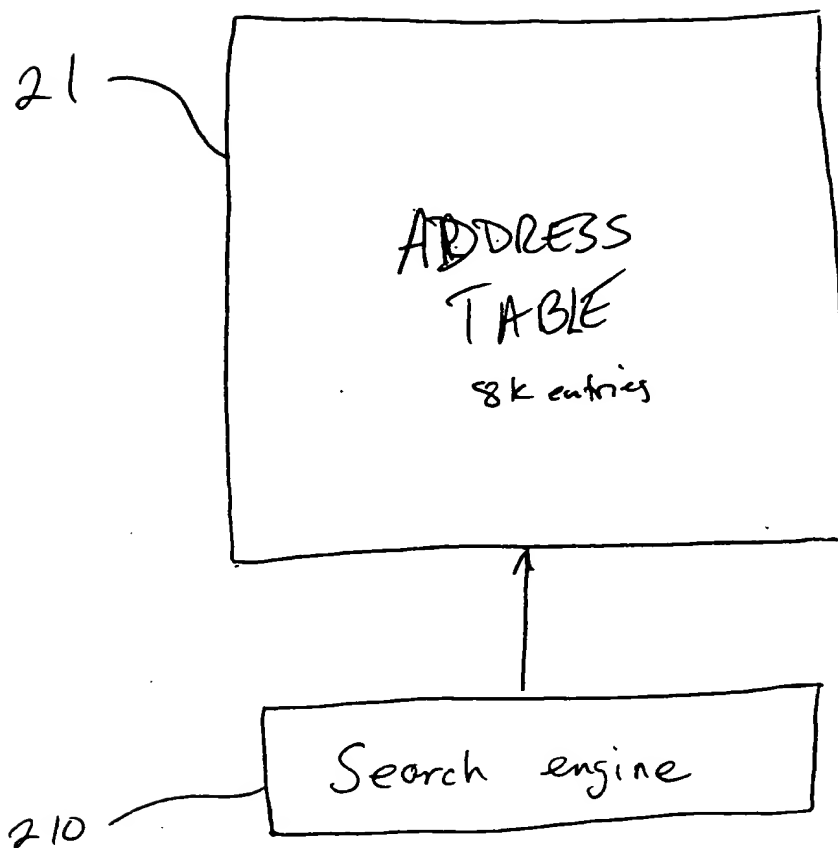


Fig 38

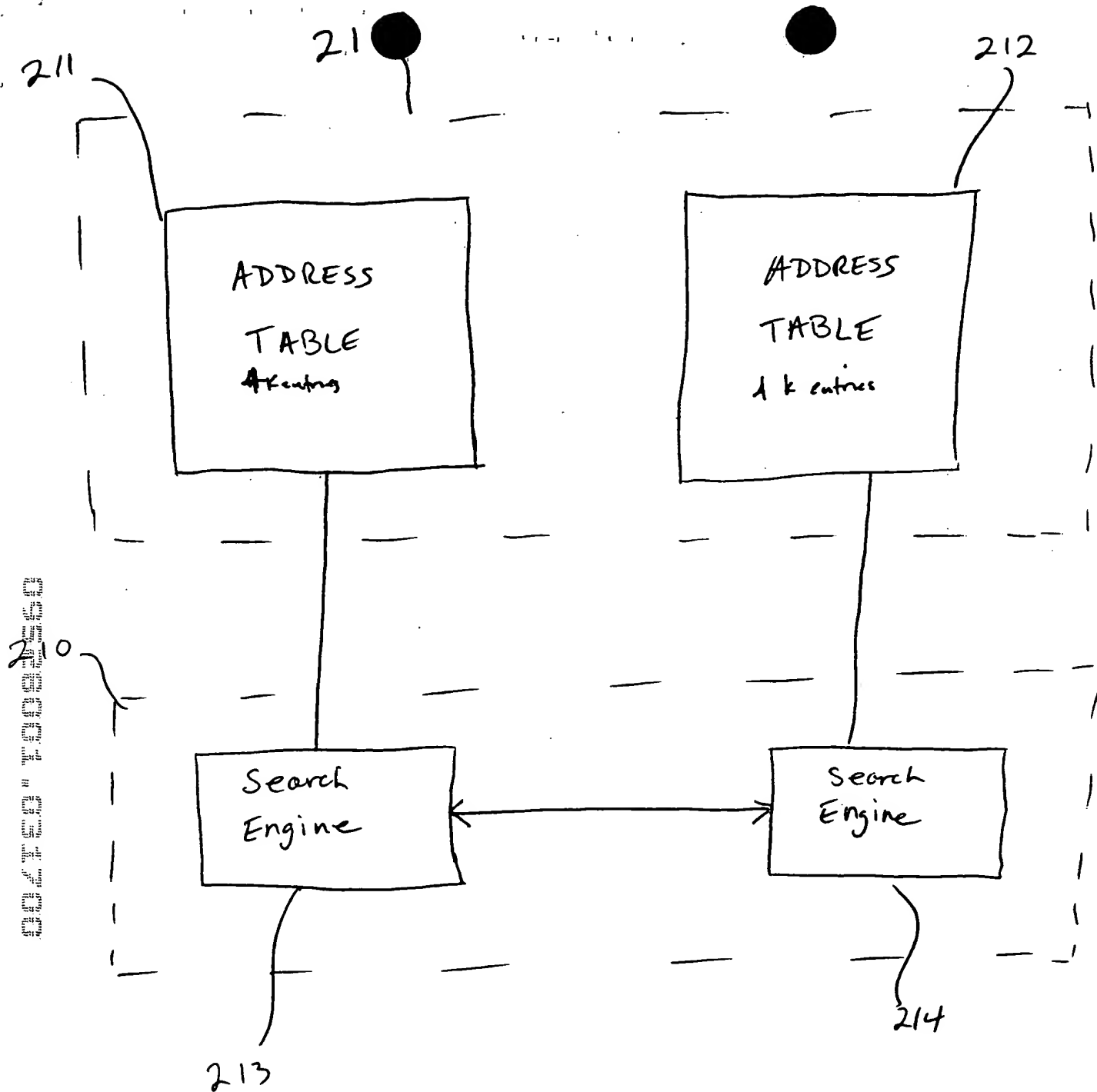


Fig. 39

Figure 40a

21 ~

address	entry
31	AF
30	AE
29	AD
28	AC
27	AB
26	AA
25	Z
24	Y
23	X
22	W
21	V
20	U
19	T
18	S
17	R
16	Q
15	P
14	O
13	N
12	M
11	L
10	K
9	J
8	I
7	H
6	G
5	F
4	E
3	D
2	C
1	B
0	A

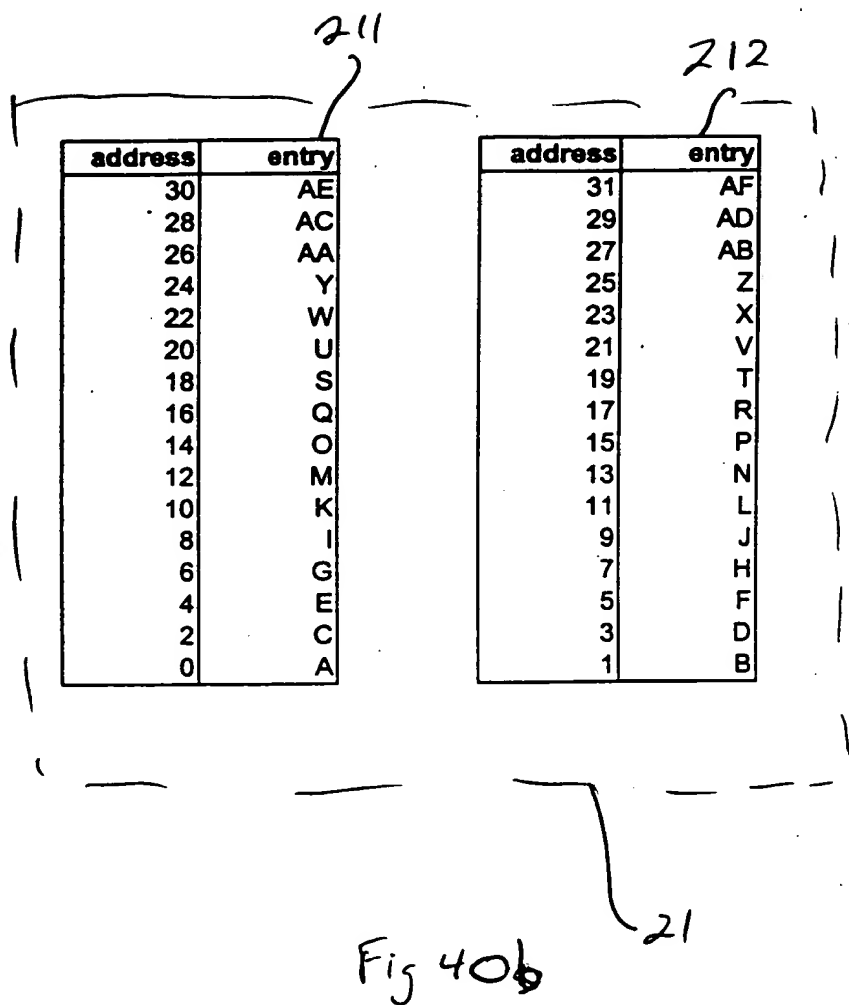


Figure 4/a

21

address	entry
31	NN
30	MM
29	LL
28	KK
27	JJ
26	GH
25	CF
24	CC
23	BE
22	BD
21	BC
20	BA
19	AC
18	AB
17	AA
16	Y
15	X
14	V
13	T
12	S
11	R
10	Q
9	N
8	M
7	L
6	K
5	J
4	G
3	E
2	D
1	C
0	B

211

address	entry
30	MM
28	KK
26	GH
24	CC
22	BD
20	BA
18	AB
16	Y
14	V
12	S
10	Q
8	M
6	K
4	G
2	D
0	B

212

address	entry
31	NN
29	LL
27	JJ
25	CF
23	BE
21	BC
19	AC
17	AA
15	X
13	T
11	R
9	N
7	L
5	J
3	E
1	C

Fig 4/a

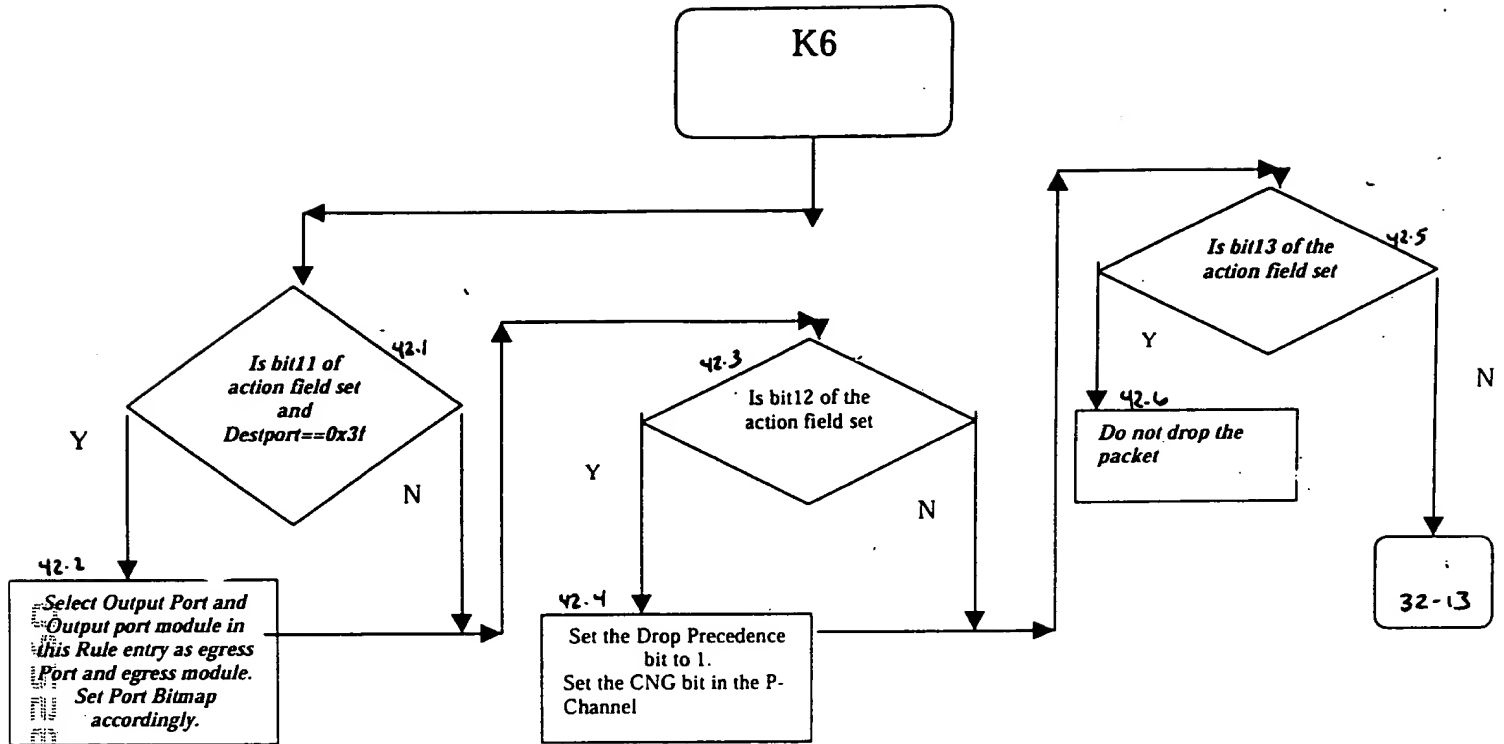


Figure 72

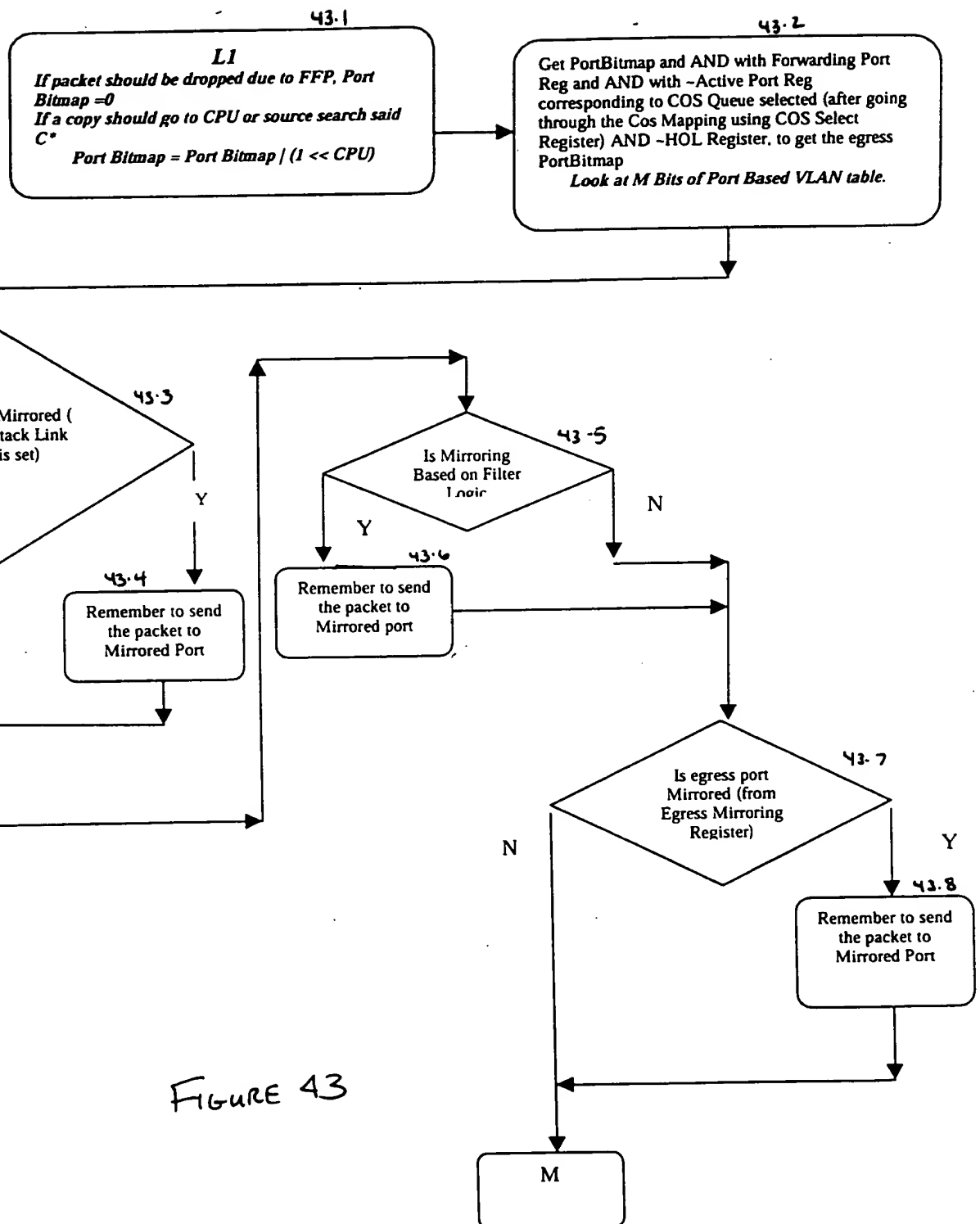


FIGURE 43

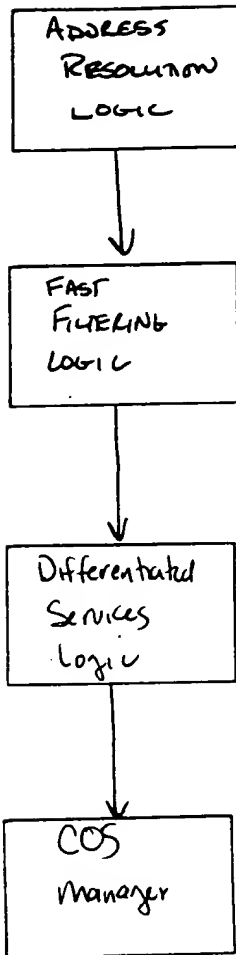


FIGURE 45

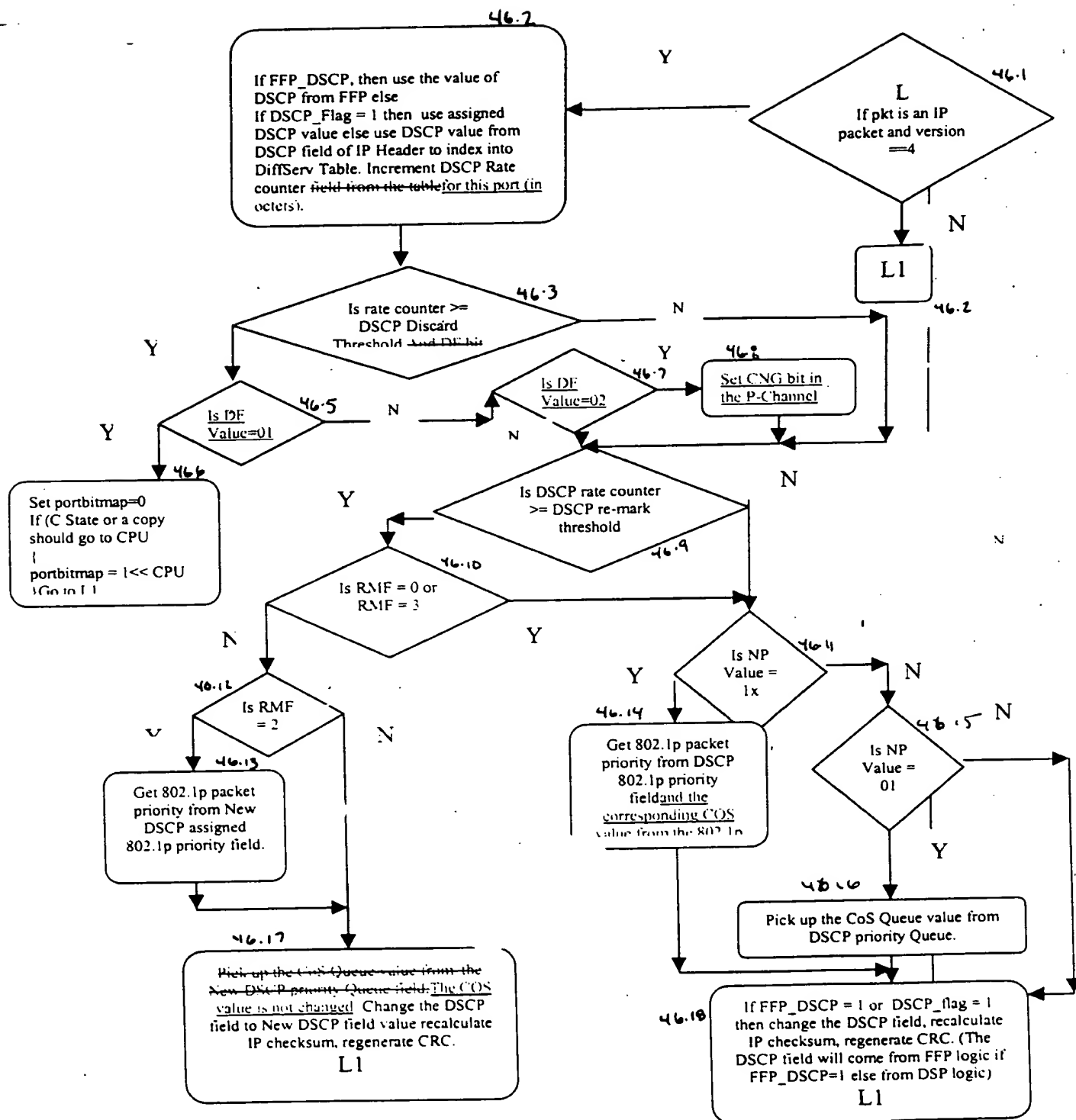


FIGURE 46

